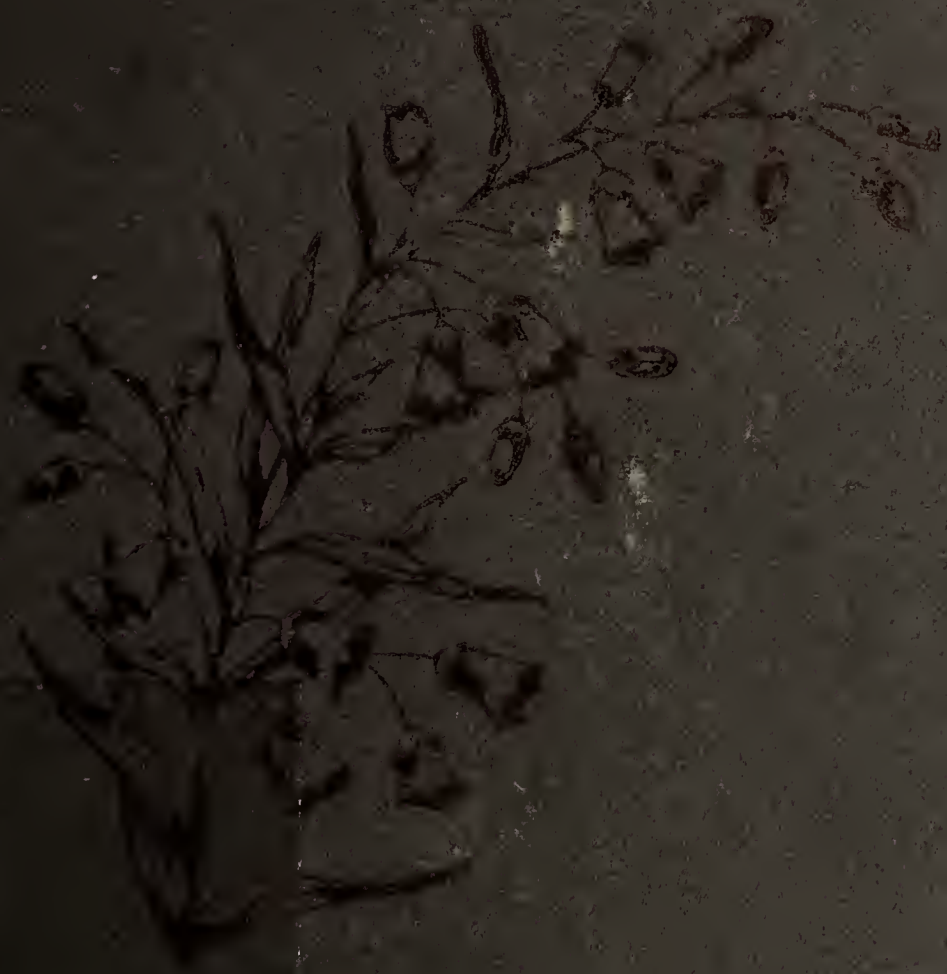


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THE
AGE AND ORIGIN OF MAN
GEOLOGICALLY CONSIDERED.

BY
S. R. PATTISON, ESQ., F.G.S.,
AND
DR. FRIEDRICH PFAFF,
Professor of Natural Science in the University of Erlangen,

AUTHOR OF

“SCHÖPfungSGESCHICHTE MIT BESONDERER BERÜCKSICHTIGUNG DES BIBLISCHEN
SCHÖPfungSBERICHTES” (The History of Creation, with Special Reference
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THE RELIGIOUS TRACT SOCIETY:
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164, PICCADILLY.

Argument of the Tract.

HISTORY is silent concerning the earliest traces of human handicraft. There is a chasm of unknown breadth between the palæolithic and the historic period. The earliest traces of man are post glacial. After man's appearance much disturbance of soil took place. The earliest cave deposits belong to the epoch of the gravels. In the gravels and brick-earth stone tools first appear. A law of development from the rude flint implements to the polished stone age cannot be proved. Many thousands of years are not required to account for the degeneracy of man from a state of comparative civilization. The facts do not require more than seven or eight thousand years backward from the present for the antiquity of man. This conclusion agrees with the facts of history, and is not in conflict with the chronology of Scripture. The tendency of modern discovery is ever to reduce the pre-historic period. By a survey of the measurements of the skulls of various races and a comparison between the oldest men known to us and now living men, it is shown that man appeared suddenly, in all essential respects the same as the man of to-day. The total absence of proof of any transition from the man to the ape is pointed out, and sufficiency and consistency of the Scriptural account of man is shown.

THE AGE AND ORIGIN OF MAN.

I.

THE AGE OF MAN.

By S. R. PATTISON, ESQ., F.G.S.

1.—THE QUESTION STATED.



THE recent soil of England, or “made ground,” in which the relics of our predecessors lie buried, shows successive occupation of the surface by Kelt and Saxon, Norman and English. We can assign, from contemporary history, dates to everything which we find in it. This can also be done around the shores of the Mediterranean, and in more remote Babylonia, Assyria, and Egypt. But in turning up the gravel below the “made ground,” or raking out the bottom of caves, we discover mysterious traces of human handicraft respecting which history is absolutely silent. We find rough stone tools, so buried as to show that those who fabricated and

Historic
period.

Traces of
pre-historic
man.

used them lived prior to all other monuments, prior to ordinary history, prior even to the legendary period of our annalists. As the oldest known indications of man on the earth they possess for us a powerful and unique interest, far beyond their mere claims on our curiosity as articles of early art.

Date of the
earliest
monuments.

We can fix within a few centuries the date of the earliest inscribed monuments; and then by adding four or five hundred years to this, in order to allow for the antecedents of the state of things which they represent, we get an approximate date for the origin of the historical period back beyond the days of Abraham. With regard, however, to the antecedent period, brought to light by the flint implements, we are utterly at a loss, so far as written records go.

No written
records of
antecedent
period.

There is a chasm of unknown breadth between the time of the old implements (palæolithic) and the historic period; in the beginning of the latter we find in Western Europe smooth stone implements (neolithic, new stone) associated with pottery and relics, to which we can ascribe an antiquity of 4000 years at furthest.

The
problem to
be solved.

The problem to be solved is the age of the preceding gravels with palæolithic implements, which must determine the epoch of man's first appearance, where they occur.

It only adds to the mysteries surrounding the matter, to be told first, that the gravel containing

these implements also contains the remains of animals now extinct, and secondly, that they are found beneath the soil, not only over Europe, but in the East. The Somme valley in France, and the Thames banks in England, are merely representative cases of a state of things which appears to have been very general at one time, before history begins.

Scripture does not appear to throw any light on this subject, unless we find it in the few words which disclose the universal moral decadence of mankind before the flood.¹ It was not within the declared scope of revelation to give this information.

Not the scope of Scripture to throw light on the subject.

In order to measure the difficulty, and give some hints for its solution, we must now refer to its geological conditions.

2.—GEOLOGY

THE geological term for the accumulations of soil during historical time is "recent." These have been spread over the land by the wear of the solid materials, through the agency of causes still in operation, at present rates of action.

Recent accumulations of soil.

The underlying strata are classified by geologists, in the descending scale, as quaternary, tertiary, secondary, and primary. With the last two we have nothing to do in the present inquiry, nor with

Underlying strata.

¹ "And the earth was filled with violence ; . . . all flesh had corrupted His way upon the earth."—*Gen.* vi. 11.

the tertiary, except to observe that in its uppermost division, called the pliocene, we discover for the first time, as we ascend, the existence of the great groups of mammalian animals, with some forms of which, in the stratum above, man is found associated.¹

Up to this time it is demonstrable that the surroundings were unfitted for the human race, one proof of which is, that no trace of cereal plants has been found in the tertiary strata. When we come up to the quaternary, a great number of animals previously unknown appear; and with these, late in the series, in the gravels and caves, appear the mysterious tokens of the presence of man, the summit and crown of life on this earth.

Tokens of
the presence
of man in
the gravels
and caves of
the
quaternary
period.

The gravel in which these discoveries are made is not spread evenly over the surface, but occurs only in patches and beds, principally along the sides of wide valleys, and above the level of the streams in their neighbourhood. It is evident, on the slightest inspection, that the gravel, whilst it was being laid down, and since, has been subjected

¹ “Nor in the succeeding pliocene age can we expect to find man upon the earth, because of the very few living species of placental mammals then alive. The evidence brought forward by Professor Capellini, in favour of pliocene man in Italy, seems both to me and to Dr. Evans unsatisfactory, and that advanced by Professor Whitney in support of the existence of pliocene man in North America, cannot in my opinion be maintained. It is not until we arrive at the succeeding stage, or the pleistocene, when living species of mammalia begin to abound, that we meet with indisputable traces of the presence of man on the earth.”—*Professor Boyd Dawkins*, B. Association, 1882.

to rushes of water, which have occasionally brought down sand; and to intervals of quiet, during which fine mud was deposited which became loam or brick-earth when dry, so that layers of river shells, layers of land shells, and bones of land animals once living on adjacent surfaces, are now found lying in the brick-earth and gravels.

Recurring for a moment to the earlier part of the quaternary, we find the presence of ice, covering a great part of England, more than half of Russia, all Scandinavia, Prussia, North Germany, and a large extent of North America. This was the glacial epoch, of the duration of which there is no chronological evidence, nor any evidence of what may have been the condition of other regions at the same time.

The glacial epoch.

The effects of the land ice of this period are to be seen in the rubble heaps and banks which dot and diversify our landscapes; and the long banks of ancient mud in the south of Scotland equally represent the action of the icebergs of the old icy sea. Can we get any evidence on our subject from these sources? We believe not; for although the great majority of cases of the occurrence of implements in the gravel are undoubtedly post-glacial, yet some instances show the prevalence or near neighbourhood of glacial conditions, but these may have been local only, and therefore afford us no assistance in the present inquiry.

The effects of the land ice.

No evidence from these sources.

Implement
gravels post
glacial.

The most recent investigators into the age of the implement gravels in the east of England (which are obviously of the same general epoch as those of the Thames and Somme) have come to the conclusion that they are post glacial. We are told that in the valleys of the Lark in Norfolk, Little Ouse, and others, whilst great antiquity must be assigned to the implements, the evidence thus far, fairly interpreted, will not allow us to assign to any of the beds containing them a greater age than those usually classed as quaternary or post glacial. Professor Blake also, a well-known careful geologist, says, that so far as his own investigations have gone, he considers that there is no reliable evidence of any flint-implement-bearing bed in the east of England being of greater antiquity than that generally known as the post-glacial period.¹

Effects of
ice.

Taking the full prevalence of the glacial epoch as a base-line, we find that the ice which radiated from the high lands, and the icebergs which streamed from the Northern Sea, have left records in lines of polished and striated rocks and scooped vallies, and lake-basins, and mud-banks, and confused stone-heaps. As local glaciers melted away, the whole land became submerged, and a fresh surface was moulded by retreating waters, and rivers; and amidst the growth of trees and plants

Moulding of
a fresh
surface.

¹ *Geological Magazine*, January, 1883, p. 38.

of existing species, man now suddenly appears in these parts as a hunter and cave-dweller.

Man's appearance as a hunter and cave-dweller.

At this time the gravel-beds and caves reveal to us the existence of two kinds of gigantic elephant, two species of rhinoceros, the Auvergne bear, the sabre-toothed lion, deer, hippopotamus, and other animals mostly now extinct, with oxen, stags, and red-deer, of still living species.

Contemporary animals.

The climate became ameliorated towards the end of the quaternary ; the reindeer, which had roamed down as far as Spain, retreated northwards.

When we speak of the glacial epoch, it must be remembered that this does not imply a period of universal ice. The geology of Central Asia is yet but little known with regard to the period in question. It is quite possible that the countries beyond the range of Arctic conditions may contemporaneously have been the scene of some of the events of early history, for aught we know. The tribes which wandered and hunted along the edges of the great ice-cap and over the plains of the Western world, and over Greece and India, may have been the offshoots of a previous comparative civilization which obtained in some more favoured spot.

Events beyond the range of Arctic conditions.

But the world was not yet at rest. After the advent of man, as shown by geology, the surface was, at least in these Western parts, subjected to much turbulence and violent action. The soil where the quaternary gravels are now found, was

Disturbances of the soil after the advent of man.

Effects
of the
disturbance
and violent
action.

first lifted up, and then depressed, and traversed by streams larger and swifter than the existing rivers, though in the same direction. In the former period, the waters tore up the surface, and filled the valleys with gravels. In the latter, the valleys were excavated, and the gravel re-sorted, and interspersed with sand and mud. The formation of river terraces shows that both these movements were accompanied by long periods of repose.

The bearing
of this on
the question
of man's
age.

Man, in England, preceded this, the last great physical revolution; and the date and duration of the latter, if discoverable, will go far to give us that of his antiquity.

The implement gravel is of the same age as the sand and mud in which the mammoth is found, with parts of the body well preserved, in icy clay, in Siberia. Mammoth tusks are so numerous along the shores of the Arctic Sea as to have formed for several centuries a valuable article of commerce.

To the epoch of the gravels belong also the earliest of the cave deposits. The caves at that time were at the level of the streams on whose sides they range, but now they are at varying heights above them.

3.—THE FLINT IMPLEMENTS.

The
appearance
of stone
tools.

It is in the gravels and brick-earth, the graves of the great mammals, and in the lowest floors of the caves, that stone tools, adapted equally for cutting, digging, or striking, appear.

The most numerous of these are shaped fragments of the pebbles themselves, or of stones obtainable hard by. They have been struck with other stones, so as to produce cutting edges and a symmetrical form ; most of them show that they have been used, and some have their edges blunted by having been rolled along with the gravel. They have been abandoned or dropped, and then covered by subsequent inundations.

How their cutting edges and symmetrical form have been produced.

Dr. John Evans, in his standard work on *The Ancient Stone Implements of Great Britain*, published in 1872, records discoveries of these remains in six caves and fifty-four gravel banks in England and Wales. The number of such discoveries has at least been doubled since that date, and foreign localities are still more numerous. Public and private museums are everywhere displaying these shaped flints amongst the articles which appeal to curiosity and interest. They have been found in Spain, Italy, Greece, Algeria, Upper and Lower Egypt (it is said in the conglomerate slabs of which the tombs of the kings are built), Palestine, India, and even in North America ; all substantially of the same type, lying under similar conditions, of the same geological age, and apparently testifying of the same social epoch. They occur beyond the bounds of our ordinary history, and denote a community of character over an area startling from its extent. It is as though

Discoveries in the caves and gravel banks in England and Wales.

Also in other countries.

Their significance.

the world had at one time passed through a hunting or predatory stage, as regards man and the mammals, interrupted by a watery catastrophe.

The tools
indisputably
the works of
ancient man.

Doubtless some collectors of these implements have been deceived by the similarity of accidental chips to artificial forms, and have classed among the latter some of the former. The unwary have been imposed upon by counterfeit originals, which have been readily struck out to supply the demand. But these sources of error are easily unmasked and allowed for, and do not affect the conclusions which scientific men have drawn from an immense number of undoubtedly valid specimens. It cannot be for a moment disputed that the great majority of the tools are veritable works of ancient man.

The
Crayford
palæolithic
tool factory.

At Crayford, where there are the evidences of a palæolithic tool factory, the shape of the implements shows that they have been used for cutting, for digging, and for hammering. The bones of mammoth and rhinoceros in the same deposit, may be the relics of creatures slain and dressed for food with these implements thus ready at hand.

Materials
used.

Although flint is the best material for stone cutlery, yet every variety of quartzose or hard stone has been used. Whilst there are no polished stones amongst the palæolithic implements, there are numerous unpolished ones accompanying those

of the neolithic age, or even down to recent times. Stone being commonly at hand, and presenting or taking a cutting edge, would of course be adapted and used by all people in proportion to the difficulty of obtaining metal, and exclusively in the absence of the latter.

There is a general resemblance between all the flint tools, yet each district has its fashion, so to speak. The eye soon learns to distinguish between the almond-shaped and the spear-shaped, between the St. Acheul type and the Hoxne type. So too there is a great difference in the finish of tools from various places. At Clapton, in a succession of similar beds, the latest are the best finished. The French archæologists have elevated these differences into characteristics of progression during tens of thousands of years, without any shadow of proof, and against all probability.

General
resemblance
and variety
of fashion.

The
conclusions
of French
archæo-
logists from
the
differences
baseless.

It is a fact that up to the present time no human bones have been found in the beds containing the tools, though there are abundant bones, teeth, tusks, and horns of animals. The reply that human bones decay quickly is not satisfactory, as other mammalian fragments are preserved in the same circumstances. We must confess ignorance, and be content to wait. In spite of this we are bound to consider the fact as established, that before the historic period there was an age, quite unrecorded in writing, during which man existed, and which,

No human
bones found
with the
tools.

Ignorance
must be
confessed.

Man existed
in our
country for
an
unrecorded
period
terminated
by rushes of
fresh water
and changes
of land level.

at least so far as our country is concerned, was terminated by rushes of fresh water and changes of land level.

4.—TIME.

Man lived
on the
surface and
left stone
tools before
the
uppermost
gravels were
laid down.

It is clear that once upon a time, before the uppermost gravels were laid down, the soil then forming the surface was trodden by man, who made, used, and left stone tools of a special type. Secondly, there was a time when by repeated rushes of water, these worked stones were carried forward with pebbles washed out of the surface chalk, and deposited by floods, with sand, gravel, or mud, where we now find them.

These stones
deposited
where we
now find
them by
rushes of
water.

The force
and duration
of this
action.

It is equally clear that the last-mentioned action must have been of sufficient force and long duration to have scooped out or enlarged many existing valleys, to have tranquilly deposited sediment in some places, and in others to have allowed the accumulation of sand amongst which are remains of molluscan creatures which lived and died there, and to allow for successive occupancy or resort by numerous tribes of large animals, and by man. But the effects of the denudation in excavating and widening valleys are far too considerable to have been produced by the feeble causes now in operation: the disruption and displacement of strata demands

The
excavation
and
widening of
valleys
cannot have
been
produced by
forces now
in operation.

violent action, and the wide-spread gravels point to floods far more powerful than the present streams could furnish. Hence time is not the only element to be considered.

Time not the only element to be considered.

The great difference in construing the foregoing facts in their bearing on time arises from the opposite opinions held by advocates of rival schools of geology. The one, following Lyell, holding that these effects were produced in the same manner and at the same rates of time as similar effects are at the present, estimate the time required for wearing down river beds into valleys, and for depositing gravel and loam, by scores of thousands of years; whereas others, seeing in the records of the past positive proofs of violence, and fuller and swifter actions of force, maintain the probability of a far shorter duration, and put forward the sufficiency for all purposes of about eight thousand years from the present time. A third section of geologists, comprising many of the chief scientists of the day, decline to assign any date in years for the antiquity of man; affirming that the facts are not yet ripe for any such determination. Professor Prestwich, writing of the geological changes since the deposition of the flint implements in the Somme valley, says,

Various theories.

“All these phenomena indicate long periods of time. I do not, however, find that we are yet in a position to measure that time, or even to make an approximate estimate respecting it.

Professor
Prestwich

That we must greatly extend our present chronology with respect to the first existence of man appears inevitable; but that we should count by hundreds of thousands of years, is I am convinced, in the present state of the inquiry, unsafe and premature.”¹

The speedy
obliteration
of surface
changes.

It is, however, surprising to find how soon the settled course of nature obliterates all marks of such surface changes as the condition of the gravels and brick-earth indicate. The estuaries around our south-eastern coast, which have been filled up in historical times, some within the last seven hundred years, to a height of thirty feet from their sea-level, by the gradual accumulation of soil, now look like solid earth, in no way differing from the far older land adjoining. The harbours out of which our Plantagenet kings sailed, are now firm well-timbered land. The sea-channel through which the Romans sailed on their course to the Thames, at Thanet, is now a puny fresh-water ditch, with banks apparently as old as the hills. In Bede's days, in the ninth century, it was a sea-channel three furlongs wide.

The palæolithic changes, save the one disturbance when the strata were raised and broken, and the Straits of Dover formed, and the cave-cliffs raised up, and wide valleys re-excavated, do not display any phenomena requiring longer

¹ “Theoretical Considerations on the Drift containing Implements,” etc. *Philosophical Transactions* (Royal Society), 1862.

time than about a thousand years. We have then to assign some time for the disturbances referred to, and we make allowance for this in proposing less than another thousand years.

The time required for the palæolithic changes.

We have already observed that most of the implement gravels overlie the glacial débris. We may cite as a typical instance one which occurs in Swabia, and is related by the explorer, Mr. Fraas.

A settlement of the primitive population was discovered at Schüssenried. A hole had been dug in the glacier débris, and the remains of their meals, sweepings, and implements that were broken or had become useless were cast into it. The first particularly excite our interest, for they enable us to determine what was the prey of those primitive inhabitants. The bones of the reindeer preponderate, the number of them is so great that Fraas believes that he is justified in concluding that hundreds of them had been slain. The bones of a bear, probably not different from our *Ursus Arcticus*, occur, but are rare. There were also found bones of a glutton, and other animals belonging to the colder regions, and of a horse—of species now living. All these bones lie thickly embedded in moss, to which they are indebted for their good state of preservation, and which itself was well preserved, and proved to be either of high northern species, or of those found near the snow line in the Alps.

Discovery at Schüssenried

The
settlement at
Schüssenried
one of the
earliest.

All the implements that were found were of stone, particularly flint, or of horn and bone. The first kind, of which six hundred specimens were collected, must have been manufactured on the spot, as appears from the occurrence of splinters. Many hard Alpine stones were gathered from the glacier débris. The smaller fine implements were chiefly made from reindeers' horns. The absence of every trace of pottery, as well as the rather rough form of the implements, renders it, according to Fraas, in the highest degree probable that the settlement in question is one of the very earliest, and it was formed here at the end of the glacial period. Hence the cold climate, which is evidenced by the remains, would easily be accounted for.

No law of
development
can be laid
down.

Were it not for the unmistakable proofs, from changes of level, of a great physical disturbance, we might content ourselves with the conclusion that the rude flint implements were the first stage of the art of barbarians, succeeding generations of whom, after years of practice, developed further skill in the fabrications of the polished stone age. But the sequence of events has been so strangely interrupted by physical catastrophe, that we cannot lay down any such law of development, for there appears to be an absolute break, and no bridge has yet been discovered between the first and the second period. We may surmise that the men who had used the rough tools, and had been driven back by

floods and earth movements, or their successors, may have returned later on, with improved fashions in stone; and in after years, again, may have acquired by intercourse with more favoured countries, the use of metals, the fabrication of pottery, and other tokens of civilization, but of this we have no evidence.

Suggestions.

It has been contended that the progress of man from the state of comparative civilization which we may, from Scripture, infer to have been his first condition, to that of a savage of the stone age, or *vice versâ*, would inevitably require a lapse of very many thousand years; but the observations of modern travellers do not support this view, and in confirmation of this we may cite the following instance: Baron Nordenskiöld, in his narrative of his stay among the inhabitants of the shores of the Arctic Sea, near Behrings Straits states that two people of different race and language, placed under similar conditions of climates and food supply, rapidly converge into common features and character, and notices the quick absorption into the mass of any foreign element casually introduced. He also adds the important conclusion from his observations, that the changes which can be ascertained to have taken place historically, are changes not of progression, but of decadence. He even considers that the lost Danes, who are known to have colonized Green-

The degeneracy of man rapid.

Nordenskiöld's observations in the Arctic regions.

The Danish colonists of Greenland of the eighth century have become the Eskimo of to-day.

land in the eighth century, of whom nothing has been heard since 1406, have been converted into Eskimo, and thus all traces of them have disappeared. He says, "A single century of complete separation from Europe would be sufficient to carry out thoroughly this alteration of the present European population of Greenland; and by the end of that period, the traditions of Danish rule would be very obscure in that land."¹

We may conclude with Dr. Southall, that "the palæolithic hunters of the Somme valley did not *originate* in that inhospitable climate, but moved into Europe from some more genial region."²

The distribution of the tools affords no help in framing a chronology.

Computations of age and duration very various.

The extent of the area over which the tools are found, does not give us much help in constructing a chronology, for gravel beds, unlike the older strata, are not continuous on their level, but constantly interrupted, and are also varying in thickness and in the nature of their materials. The difficulty of framing any general system of succession appears to be almost insuperable. Most of the smaller gravel beds have been disturbed, re-sorted, and re-distributed by water, more than once, as their contents show. Hence the opportunity offered for the most widely differing computations of age and duration. It is precisely similar with Egyptian chronology.

¹ *Voyage of the Vega*, Vol. II., p. 544.

² *Epoch of the Mammoth*, p. 315.

There are certain dynasties about which learned men are in doubt whether they were successive or contemporaneous. Each chronologist stretches or contracts these missing links as suits his own theory.

Analogy of
Egyptian
chronology.

5.—CONCLUSION.

Mons. Gabriel de Mortillet, Professor of Pre-historic Anthropology in Paris, in his work just published,¹ deduces from similar but more extended data of the kind we have given above, the astounding conclusion that man appeared on the earth 230,000 years ago! *i.e.*, he adds to the 6000 years of actual history 224,000 pre-historic years,—years of stone implements, years of a progress which might more fitly be termed stagnation. This great *terra incognita* is by him peopled with an imaginary race of men beginning before the glacial epoch, continuing in southern climes whilst it lasted, returning without improvement, living on French and German soil for 50,000 years, progressing so slowly as to learn nothing but a slight improvement in stone tools, being from generation to generation fishers and hunters only, knowing nothing of agriculture, living without domesticated animals, without any religious ideas! Such a phase of humanity is absolutely inconceivable. It is entirely inconsistent

M. de
Mortillet's
calculations.

His
representa-
tions in-
conceivable

¹ *La Préhistorique Antiquité de l'Homme.* Paris, 1883.

with all that we are, and all that we know. After the endurance of this forlorn companionship with the beasts for nearly 200,000 years, he says that man became an artist, *i.e.*, he learnt to scratch outlines on ivory and bone! He goes on to say that a few thousand years after this, there was a movement of the world's population, the eastern tribes having acquired some religiosity, some knowledge of art and political life, invaded the west, and gave a new character to the mixed race which resulted from the irruption of the civilized community into the territory of our savage but simple forefathers in these western parts. Surely all this may be fiction, "may be poetry," but it is neither science nor philosophy. The assumption of the almost-infinitely slow succession of about a myriad generations of shivering savages is too grotesque to be dealt with seriously, had it not had the advantage of annunciation by one of the foremost of the archæologists of France. Well may M. Mortillet close his book, as he does, with the sage reflection: "But the pre-historic is a new science, far, very far, from having said its last word." We can only add,—very far indeed!

M. de
Mortillet's
assumptions
too
grotesque
for serious
treatment.

How far the
human
period goes
back.

With regard to time, we must again call attention to the fact that the human period has certainly extended backwards into the time when some of the great animals of which written history gives no account, were living on the earth.

The mammoth, for instance, must have been known to the cave-dwellers in France, as carvings of its form on ivory and bone have been found, although legend and history are alike ignorant of its existence. Indeed, the mammoth has left more numerous traces in quaternary deposits than any other animal. Its bones and teeth are found scattered on the uplands, where they must have fallen before the valleys were re-excavated, and on the banks and levels of streams, partly brought down by the rivers and partly buried on the land they occupied whilst living. The mammoth became extinct in Siberia within very late quaternary times, if not within the historic period; but we are not furnished with any date assignable to the undoubted fact of its contemporaneity with the first men in England. We cannot tell how long they lived together.

The mammoth known to the cave-dwellers in France.

It became extinct in late quaternary times, if not within the historic period.

Historians of the older school invariably commenced their works with preliminary fables, the length of which was in proportion to the writers estimate of the importance of his subject. Geologists have taken similar license; but the scientific imagination has laws, and one of these is expressed in the principle that a sufficient cause is reason enough. We have to deal with the duration of a long watery epoch, succeeding a long icy one, and with the occurrence, after the appearance of man, of a series of physical changes of surface, resulting

The license taken by geologists.

Conflicting
conclusions
of geologists.

in the present condition of things. As there is no secular time-record available, we can only reckon by the events; and although many, perhaps the majority of geologists, studying the earth alone, would be of opinion that these events may have occupied somewhat more than eight thousand years, yet other geologists from the same facts may arrive at a different conclusion. If, therefore, from any other science or study, we have reason to believe that the race of men has existed only about eight thousand years, it is impossible for geological science at present to confute or disprove it.

Other than
geological
evidence
valid.

Three stages
in the
quaternary.

Can we put the case affirmatively? We have made out three stages in the quaternary, disregarding the boulder-clay as any index of time. The first when man appeared; second, when he was displaced by floods; thirdly, when he lived and worked on the present surface. Now, naturalists bring down the close of the glacial period far into quaternary times, for they point out that there are no palæolithic implements found in Scandinavia, though neolithic tools abound, whence it is inferred that this district was then under the ice and uninhabitable, and continued so until the neolithic age. The neolithic age is estimated to have occurred here about 4000 or 5000 years ago,¹ so that the latest work of the glacial epoch vanished not earlier

The
neolithic
age.

¹ Worsaae fixes its close in Denmark at about 2500 years ago. *Primeval Antiquities*, p. 135.

than this. If we assign any reasonable duration before this to the prior palæolithic age, including the period of physical disturbance and of man's antecedent resort here, we arrive at seven or eight thousand years backward from the present, and no more. If this computation is well grounded, it at least dissipates all visions of fabulous antiquity.

The palæolithic age carries us back only seven or eight thousand years from the present time.

We may be allowed to mention that neither the calculations of astronomy, nor the inductions of ethnology, afford us any certain aid in this inquiry at present.¹

It will be satisfactory to place together such few elements as we possess from history concerning the earliest dates. Babylonian authorities (a brick-record of Nabonidus²) carry the annals of that kingdom to B.C. 3800,—the epoch of the great Sargina, supposed to have lived within a few generations of the Flood, which the same records pourtray. Egyptian discoveries carry us up no higher³—say 6000 years from the present time. We therefore assume this to be the extreme duration and antiquity of what we may term the historic period. This includes the neolithic age in

Historical evidence.

Babylonian chronology

Egyptian chronology.

¹ See Boyd Dawkins. Address at Southampton, *Nature*, August 31st, 1882.

² See Sir H. C. Rawlinson's letter to the *Athenæum*, Dec. 9, 1882.

³ Vide R. S. Poole. *The Cities of Egypt*, 1882. But Mr. Poole says:—"The chronology of Ancient Egypt is as yet undetermined, the best authorities differing by many centuries."

Europe and America; includes the epoch of the cromlechs and stone circles; includes the era of the pre-historic cities on the site of Mycenæ and Troy; includes, of course, all antiquity save the palæolithic age.

Biblical
chronology.

The Bible, in the first chapters of the Book of Genesis, declares a limit to the antiquity of man, but does not undertake to fix it. The only materials which it offers for the calculation are genealogies given for purposes of pedigree, and evidently not chronologically complete.¹ As was to be expected,

Various
authorities.

different writers have from these given very different computations of time. According to the construction adopted in the Septuagint, the creation of man occurred 7517 years ago; according to Dr. Hales 7294; according to the Vulgate 6067; according to Bishop Ussher 5967. Secular history, as we have seen, goes back nearly 6000 years, so that the interval between that and the Creation seems to require some extension of the ordinary chronology, to allow for the immediate antecedents of secular history and for the whole palæolithic period. If for these, and the first

Extension of
ordinary
chronology
required.

¹ “From the Call of Abraham it is possible to construct a chronology that cannot be far wrong. . . . Previously to that date all is uncertain, and while in a religious point of view we have everything that we want, it is as impossible to construct a scientific chronology of the world from the records in Genesis as it is to construct from those same records a scientific geology or astronomy.”—*The Dean of Canterbury, O. T. Commentary*, p. 9.

human period recorded in the Book of Genesis, we allow 2000 years, we get a term of about 8000 years as warranted by deductions from history, geology, and Scripture. If further geological evidence should at any time require it, we might without violence to the Scripture commence our chronology a few years earlier still. With geological records of great uncertainty, and written records declared to be incomplete for this purpose, we submit that it is sufficient for us to show a near approximation between science and Scripture, and to express the conviction, founded on actual facts, that the more geology is studied and its facts ascertained, the closer does this approximation become; already this is the case in the judgment of some leading geologists, for undoubtedly the tendency of modern observation and discovery has been to bring down and modernize the mammalian and prehistoric epochs.

Sufficient to show a near approximation between science and Scripture.

The tendency of modern discovery to modernize the date of the prehistoric epochs.

Finally, the matter stands thus,—the exact age of man on the earth is not ascertainable by science, but science shows to us a number of converging probabilities which point to his first appearance along with great animals about eight thousand years ago, and certainly not in indefinite ages before that.

The final conclusion.

Geology, standing beside the most ancient works of man, hitherto discovered by it, interprets them as belonging to a race of savages. We know, however, too little about them to come to any such

Conclusion
that
primitive
man was
savage un-
warranted.

The
discoveries
of ethnology.

conclusion; but if this were so, we are warranted in saying that these were not the first men; they must have had ancestors more civilized than themselves, for the science of ethnology assures us of this. It discovers, amongst the very oldest monuments open to its examination, vestiges of language and manners which must have come from antecedent culture. Like rounded pebbles in a conglomerate rock, these worn fragments are foreign to their surroundings. On this important point we may quote the testimony of Professor Max Müller, who says:

Professor
Max
Müller's
testimony.

“What do we know of savage tribes beyond the last chapter of their history? Do we ever get an insight into their antecedents? Can we understand, what after all is everywhere the most important and the most instructive lesson to learn, how they have come to be what they are? . . . Their language proves, indeed, that these so-called heathens, with their complicated systems of mythology, their artificial customs, their unintelligible whims and savageries, are not the creatures of to-day or yesterday. Unless we admit a special creation for these savages, they must be as old as the Hindus, the Greeks and Romans, as old as we ourselves. . . . They may have passed through ever so many vicissitudes, and what we consider as primitive may be, for all we know, a relapse into savagery, or a corruption of something that was more rational and intelligible in former stages.”¹

Geology has
not shown
to us any
traces of the
first men.

We are thus led to infer that geology has not yet shown to us any traces of the first men. It may enlarge its field and continue its search for these. This science, so far as it has gone, appears

¹ *India*, by F. Max Müller, 1883.

to find its first specimens of humanity in a rude decivilized condition. It discovers, at present, nothing whatever of his antecedents. But the facts which it brings before us correspond with the known sacred and profane history concerning the alas, too early condition of our race. Our science has no key to the higher mysteries of man's nature, being "of the earth, earthy,"—it leaves us in the region of the shadow of death—with, however, the natural conviction that there must be light elsewhere. Nor is this expectation disappointed, for we read "Hear, O heavens, and give ear, O earth, for the Lord *hath spoken!*" The overture to *Paradise Lost* takes up and repeats the strain—

Its facts correspond with history concerning the condition of our race.

It has no key to the higher mysteries of man's nature.

It leaves us with the conviction that there must be light elsewhere, which is not disappointed.

"Of man's first disobedience, and the fruit
Of that forbidden tree, whose mortal taste
Brought death into the world, and all our woe
With loss of Eden, till one greater Man
Restore us, and regain the blissful seat."

II.

THE ORIGIN OF MAN.¹

By DR. FRIEDRICH PFAFF.



Can science
tell us what
the origin of
man was?

Hypotheses
must be
tested by
facts.

AN answer has been given in the first part of this Tract to the question, "When did man appear on the earth?" We shall now turn to the second question, "How did man arise, what was his origin?" We shall see whether natural science can furnish us with an answer to it. As this is a question relating to a fact that occurred in the most remote past, it is clear that it cannot have been observed by any student of nature; and every impartial and unbiassed observer will at once confess that his science will not enable him to give any certain answer to the question, "How did the first man, the first animal, the first plant, arise?" Hypotheses only can be advanced whose probability must be tested by the facts; and every hypothesis is at once to be rejected, if only one single fact contradicts it.

¹ Translated by permission from the German, with additions approved by Professor Pfaff.

That many such hypotheses have been advanced concerning the rise of man, by philosophers and students of natural science, is very intelligible. Men are always prone to outrun their knowledge with hypotheses. Sometimes on a right path, and sometimes on a wrong one. They are always attempting to get behind and beyond the facts. All these hypotheses and theories with respect to the rise of man can be reduced to two. One says, Man appeared at a definite time, perfect and entire, there was a first man possessing all the essential characteristics of the now living man. The other maintains that it is nonsense to speak of a first man, for there never has been one. What we call man has been gradually developed from an ape-like animal, through numberless intermediate steps, as the last member of a series extending over many millions of years.

All hypotheses can be resolved into two.

There is no other hypothesis, essentially different from these two theories, conceivable, and in so far the task of the student of nature in testing them is a simple and easy one. The two views, furthermore, lead us to expect such essentially different facts to present themselves to our observation, that the scientific proof for the correctness of the one or the other must admit of being brought clearly and decidedly forward. As the latter assumes a constant, still persisting, progressive development of all living creatures, including man, it follows

None other conceivable

The points
to be
investigated.

clearly, according to it, that the most ancient men in this chain of development must have taken a middle position between the man to-day and the man nearest to the animal; must have stood much nearer to the animal than modern man. This clears the way for us to put both theories to the proof. In order to decide which is the correct one, we must investigate first of all (1) the relation of the oldest men known to us in respect to their constitution, physical as well as intellectual, to those now living. (2) Their relation to the highest animals which we know—the apes. Let us consider first what we know about the physical constitution of the primitive population. The very numerous excavations which have been undertaken in the last ten or fifteen years, and the not less numerous researches in the caves have furnished us in this respect with such abundant material that we are well informed concerning the physical constitution of those ancient men.

The
structure of
the skull.

It is the structure of the skull that first claims our attention. For, without doubt, the brain is the organ which is the seat of all the intellectual capacities of man; hence, even in earlier times, the form and size of the skull, which fits on to the brain, was regarded as furnishing the means of forming an intellectual estimate of the higher animals, as well as of the various races of men. The one fact that the capacity of the brain

of the smallest man, even of a child, far exceeds that of the largest ape, plainly indicates the importance of this organ in judging of intellectual endowments. Proceeding from the universally valid principle, that higher intellectual capacities are connected with a more capacious brain and certain proportions of the skull, great efforts have been made of late to discover marks, partly in the relative size, partly in the relative form of the skull, which would render a classification of men not only into definite races possible, but also fix their relative rank according to their intellectual capacities, their place in a higher or lower grade.

The importance of the brain in judging of intellectual endowments.

The comparison and accurate measurement of the skulls of the most diverse people and tribes have shown in the clearest manner how uncertain these efforts must turn out to be, for the more all races have been gradually drawn into the area of the investigation, the more clearly do two facts become apparent, namely:—

(1.) There is no single mark to be found which is or ever was the exclusive property of one race, even though certain relations of form and size are more frequently found in some races than in others.

The facts that emerge from the comparison and accurate measurement of the skulls of various peoples and tribes.

(2.) It is in the highest degree hazardous to attempt to draw a definite conclusion with respect to the intellectual capacities of a race of people from the capacity of the cavity of the skull alone, in addition to which there is the fact that in every

people the relative size varies so much, that the boundary lines between the several races are thereby completely obliterated.

The relation of the length of the skull to the breadth one of the most important marks of difference between races.

Of late, the relation of the length of the skull to its breadth has been recognized to be one of the most characteristic marks of difference between different races; and according to it, dolichocephals or long skulls, mesocephals or medium skulls, and brachycephals or short skulls, have been distinguished. In order to be able easily to compare the relations of the breadth to the length in different races, it has been agreed not to quote the absolute measure of both, which often varies, but to accept 100 as the length of all skulls, be they large or small, and then to determine what percentage of the length, the breadth, which is always smaller than the length, amounts to. This proportion is called the index of breadth.

The method of comparison adopted.

The classification of skulls.

The skulls with an index of breadth of from 70–74 are called dolichocephal; those with an index of from 75–79 are called mesocephal, or orthocephal; and those in which it amounts to 80 and more, brachycephal. Others accept the sub-dolichocephals and sub-brachycephals as intermediate stages between dolichocephals and mesocephals, and between mesocephals and brachycephals respectively.

In like manner, the height of the skull in proportion to the greatest length (the height measured from the border of the hole of the

occiput to the highest point of the skull) has been designated the index of height. This varies less than the index of breadth, but still between 70 and 82. A closer consideration of the different races now living will show us how indecisive this division is. To take, for example, the Germanic stock, we find, on an average, the index of breadth among the Scandinavians at 75; among the English at 76; among Holsteiners at 77; in Breisgau at 80. Schiller's skull shows an index of breadth even of 82. The proportions vary in a still greater degree among the Malays. The Maoris, in New Zealand, show one of 73; the Tahitians of 75; the inhabitants of Sumatra show 77; the people of Java, 79; the Madurese at last 82. In almost all countries representatives for these three kinds of skulls are found side by side.

The index of height and its variations.

The average index of skull among various races.

In relation to the second point, the estimate of the volume of the skull for the purpose of judging of the intellectual capacities, we shall content ourselves likewise with the quotation of some figures. If we compare the estimates of the volumes of the skulls of different people, it will, of course, be shown that many among them have a very decidedly smaller volume of skull than others. But it does not always stand in a direct proportion throughout to the intellectual endowment and development; notwithstanding, as regards these qualities, the French certainly are in the highest

The volume of the skull in relation to the intellectual capacities.

Dr. J. B.
Davis's
measure-
ments.

rank of mankind, and yet, according to the measurements of Dr. J. Barnard Davis,¹ who had more extensive materials at command than any other craniologist, the internal capacity of the skull among the French,—88·4 cubic inches, is perceptibly smaller than that of the Polynesians generally, which even among many Papuans and Alfuras of the lowest grade amounts to 89·7 and 89 cubic inches. The average of all European races is 92·3; the average of the Asiatic people amounts to 87·1; of the African, 86; the lowest of all, the Bushmen, show an average of 77·8 cubic inches.

Limits of
variation
among
Europeans.

As we have been able hitherto to base our estimate of the volume of the skull among those races that are less accessible to Europeans only on a measurement of a few skulls, we cannot determine accurately whether we have already obtained a right average figure from these; and we must determine the limits within which the capacity of the skull, even among Europeans, may vary. Davis describes a Roman skull with a volume only of 62, and an Irish skull with a volume of 124·2 cubic inches, so that, according to this, the minimum and maximum are equally removed from the average.

Having made these necessary preliminary ob-

¹ Philosophical Transactions of the Royal Society of London for the year 1868. Contributions for determining the weight of the brain in different races of men, by Joseph Barnard Davis, M. D.

servations, I would proceed to a consideration of the oldest skulls of the pre-historic period. And first of all, as regards the form of these skulls. We find among them dolichocephalous and brachycephalous skulls, belonging very probably to two different races, of which the dolichocephalous agree in all characteristics with the now living Basques; while the brachycephalous as having entered later, are the Kelts, in single cave-graves and mounds, often only of one kind, but sometimes also both mixed together in one burial-place. The index of breadth varies from 71·0 to 81·1 in numerous skulls of the stone period found in English tombs and caves.

The oldest pre-historic skulls.

In French burial-mounds it varies from 70·2 and 85·7 in the equally numerous skulls of the stone age that have been found. The index of height in the same skulls varies from 71·0 to 84·8, and this great variation occurs even in skulls from one and the same cave, namely, the cave of Perthi-Chwaren, in Wales.

Of greater importance for the question before us is the volume of these old skulls. With reference to this a startling fact comes to light, that most of these old skulls, belonging to the stone period, are above rather than below the average of the brain of the now living men in volume. We have an accurate direct determination of the capacity of few of these, partly, fragmentary skulls. We obtain, however, figures well adapted for the com-

The skulls of the stone period above rather than below the average of the now living men.

parison of the contents of the skull, if we add the measures for the height, breadth, and length of every skull, and compare the resulting figures together, inasmuch as the form of the different skulls being, in general, pretty much the same, these figures give us a correct representation of the capacity of the different skulls, just as well as the quotation of the three chief dimensions of similarly formed vessels renders a judgment of their greater or smaller capacity possible.

Average
measure-
ments of
various
skulls of the
stone age.

If we calculate the measures for the height, breadth, and length, in inches, for the single skulls, or, with more abundant material, the average measurements of several skulls, and add them together, we obtain the following sums :

- 1. Old northern skulls of the stone
age 18·877 in.
- 2. Average of 48 skulls of the same
period from England 18·858 „
- 3. Average of 7 skulls of the same
period from Wales 18·649 „
- 4. Average of 36 skulls of the stone
age from France 18·220 „

The average of the now living Europeans is 18·579 ; of Hottentots, 17·795.

Conclusion
from size of
the skull.

We see very clearly from all this, that the size of the brain of the oldest populations known to us

is not such as to permit us to place them on a lower level than that of the now living inhabitants of the earth.

It has recently been asserted by Dr. Grant Allen,¹ that one of the most ancient skulls hitherto described,

Dr. Grant Allen on the Neanderthal skull.

“the Neanderthal skull, possesses large bosses on the forehead, strikingly suggestive of those which give the gorilla its peculiarly fierce appearance ;”

and that

“no other human skull presents so utterly bestial a type as the Neanderthal fragment. If ones cut a female gorilla skull in the same fashion the resemblance is truly astonishing, and we may say the only human feature in the skull is the size ;”

but Professor Owen wholly contradicts this and says :

Professor Owen on the same.

“I have to state that the super-orbital ridge is but little more prominent than in certain human skulls of both higher and lower races, and of both the existing and cave-dwelling periods. In the human ‘skull’ in question, the mid-line traced backward from the super-orbital ridge runs along a smooth track. In the gorilla a ridge is raised from along the major part of that track to increase the surface giving attachment to the biting muscles. In the Neanderthal individual, as in the rest of mankind, the corresponding muscles do not extend their origins to the upper surface of the cranium, but stop short at the ‘temples,’ whence our ‘biting muscles’ are called ‘temporal,’ as the side-bones of the skull to which they are attached are also the ‘temporal bones ;”

and further says :

“As far as my experience has reached, there is no skull of any Quadrumanous species, from the gorilla and chimpanzee to the

¹ *Fortnightly Review*, 1882.

The
differences
between the
highest ape
and the
lowest man.

baboon, which exhibits differences on which specific and generic distinctions are founded, so great, so marked, as are to be seen, in the comparison of the highest ape with the lowest man."

He adds that

"the modification of man's upper limbs for the endless variety nicety, and perfection of their application, in fulfilment of the behests of his correspondingly developed brain, testify to the same conclusion. The corresponding degrees of modification of the human lower limbs, to which he owes his upright attitude and his distinct character, combine and concur in raising the group so characterised above and beyond the apes."¹

Dr. Grant
Allen on the
Cave-men.

Dr. Grant Allen states

"that the Cave-men probably had lower foreheads, with high bosses, like the Neanderthal skull, and big canine teeth, like the Naulette jaw."²

Professor
Owen on
cave
specimens.

But Professor Owen, on the contrary, says that

"the human lower jaw, so defined from a Belgian cave, which I have carefully examined, gives no evidence of a canine tooth of a size indicative of one in the upper jaw, necessitating such vacancy in the lower series of teeth which the apes present. There is no such vacancy, nor any evidence of a 'big canine tooth' in that cave specimen. And, with respect to cave specimens in general, the zoological characters of the race of men they represent must be founded on the rule, not on an exception, to their cranial features. Those which I obtained from the cavern at Bruniquel, and which are now exhibited in the Museum of Natural History, were disinterred under circumstances more satisfactorily determining their contemporaneity with the extinct quadrupeds those cave-men killed and devoured, than in any other spelæan retreat which I have explored. They show neither 'lower foreheads' nor 'higher bosses' than do the skulls of existing races of mankind."³

¹ *Longman's Magazine*, No. 1.

² *Fortnightly Review*, September, p. 321.

³ *Longman's Magazine*, No. 1.

Of the countries beyond Europe that are connected with the old world we know nothing respecting their primitive popr'ation as yet, save that in India, as well as Palestile, stone implements of the same form and make have been found in the old alluvial deposits of the rivers, as the oldest European ones, but no skulls. We may therefore assume a similar constitution and a similar state of culture for these aboriginal inhabitants of Asia. In any case we must grant that we have no fact before us which would permit us to accept the conclusion that the oldest inhabitants of the earth, of whom we have, as yet, any information, were not on the same level as the majority of the now living population. In short, according to their physical constitution, the oldest men of whom we have information were not nearer to the brutes than those now living. The longer the interval of time placed between our times and the so-called palæolithic men, the more ominous and destructive for the theory of the gradual development of man from the animal kingdom is the result stated, seeing that the older we regard man in general to be, according to the theory of a ceaseless progressive development of all living creatures, it is incomprehensible how no perceptible advance has taken place in those long periods ; nay, more, how it can be shown that there has been in part a retrogression. And the question is justly put

The
primitive
population
of Asia.

The oldest
men we
know not
nearer to the
brutes than
the now
living ones.

The question
put to the
supporters
of the theory
of develop-
ment.

to the supporters of this theory: "If in the hundreds of thousands of years which you accept between the rise of palæolithic men and our own day, a greater distance of man from the brute is not demonstrable, (the most ancient man was just as far removed from the brute as the now living man,) what reasonable ground can be advanced for believing that man has been developed from the brute, and has receded further and further from it by infinitely small steps?" What right has any one to assume a constant progress, when the observation of thousands of years, within the historic period of mankind, furnishes no proof of advance?

But perhaps we are justified in regarding those ancient men as nearer to the brutes, from what we know of their intellectual endowment, their mode of life, and their culture? Let us here again realize the facts which may enable us to give an answer to this question.

The life of
the most
ancient men.

What we know certainly of the oldest men in this respect is extremely little. They lived chiefly by the chase; and at the beginning had only implements of stone and horn, and not of metal; the stones were prepared according to plan, with an object: they had axes, spears, and the earliest pile dwellers had bows and arrows, as well as needles. The extent of the débris in their cave dwellings, and still more the great pile-buildings,

show us that they formed communities that lasted for a long period. The representations, moreover, of the mammoth, the reindeer, the horse, executed with much fidelity to nature on ivory made from a mammoth tooth, or reindeer horn, or on hard slate, of the oldest, the so-called palæolithic period, that have been found in great numbers, and whose value is in no wise depreciated by the fact mentioned above, that some have imitated them, and issued the counterfeits as genuine, testify to their artistic sense, and no small proficiency in art.

Their artistic sense.

“The most clever sculptor of modern times,” says Mr. Boyd Dawkins,¹ of these works, “would probably not succeed very much better, if his graver were a splinter of flint, and stone and bone were the materials to be engraved.”

This is all we know of the life of those old people of the chase, who were not wholly ignorant of agriculture. We can draw no further conclusion from the data than that they were not far advanced in technical knowledge, and led a hard life, devoted chiefly to the acquisition of the means of living, and were on a low platform of culture. But that is far from sufficient to enable us to form a judgment concerning the condition of their intellectual life, their intellectual endowment; but this is precisely what we require to know, if

Conclusion from what we know.

¹ *Cave-hunting*, p. 344.

we would decide whether that primitive population was nearer to the brute than the present one. If we candidly face the question, we must confess that even if we could certainly conclude that their outward life closely resembled the life of our so-called savages, we should not be justified, without further information, in regarding them as in the same stage of intellectual development. Those primitive people had certainly little technical and scientific knowledge. But the measure of knowledge alone does not justify us in undertaking the classification of a man, if we would indicate his rank in relation to the brute.

Knowledge
and
intellectual
capacity.

It is a universally known fact that the sum of the knowledge of mankind increases continually, but that intellectual capacity does not increase with it. It may appear to a superficial observer to be a very insignificant amount of progress when a child has learnt to speak, if he compares it with the enrichment of his knowledge by a few years' subsequent attendance at school; but one of deeper insight, having regard to the physical antecedents, would not so readily express a decided opinion on the subject, whether the performances of earliest childhood, or those of later childhood and youth, represent more actual intellectual labour. So we are only too much disposed to regard the first technical discoveries, the preparation of the first tools, as something very light, easy, and betraying little

intellectual capacity ; and yet all the essential qualities that distinguish the action of man consciously directed to a purpose, and having regard to the future, from the unconscious action of the brutes, were displayed by the first men in the preparation of implements intended for a definite purpose, and in making which they had no models to guide them. If we would institute a comparison between the first men and their circumstances, and men now living, in order to form an accurate judgment as to their intellectual faculty, it is not correct to say that the most ancient are to the present men as the brute is to man, but as the child to the grown-up man.

The most ancient men are to the present as the child to the man.

When we investigate the place of a man in relation to this question, whether he is ruder and nearer to the brutes than others, we discriminate not only the intellectual side, the acquisitions and insight, but also the moral qualities. Involuntarily we always put his moral worth into the balance in our estimate of a man. Nay, more, I believe it would be difficult for any of us decidedly to say in the first instance, on any occasion, on what we should lay greater weight in estimating the stage to which we should assign a man, whether on his intellectual endowments or on his moral qualities. The consideration that we deny the last wholly to the brutes, while we concede a certain measure of intelligence to them, and that

Moral qualities affect our estimate of men.

We know nothing of the moral and religious state of the mammoth hunters.

according to this these moral qualities furnish a more essential mark of distinction between men and brutes than those intellectual ones, will make our decision anything but an easy one. Now, it is in any case quite certain that we know nothing at all about the moral condition and religious ideas of those ancient mammoth hunters; we may make conjectures about them, as has been abundantly done; but when we test these conjectures, which often flatly contradict each other, we find that they have their foundation in certain theories of the way and manner in which the course of development of modern man has taken place, which those who advance them, and hold them to be true, have originated for themselves, and apply to those ancient peoples.

The argument of the Tract confined to facts.

However interesting such theories may be, we do not believe ourselves to be at liberty to discuss them in this Tract, because we wish to confine ourselves exclusively to the facts of natural history, which furnish us with the only firm standing ground for the discussion of the question before us, as long as no positive and certain laws concerning the development of single peoples, or of the different races, have been discovered.

The state of the question.

Accordingly, the matter stands thus: As regards the physical constitution of the primitive population, what we know of their bodily frame, above all, of their skull, does not give us the very least right to place them on a lower grade, nearer to the

brutes than the majority of the races of people now living. As regards their capabilities and mode of life, the facts furnish us with no data which enable us to look upon them as not of the same origin as the men of to-day; and with respect to their moral condition, we know next to nothing of it; and as "from nothing nothing comes," we can say nothing at all on the subject.

We must, therefore, conclude from our researches, until other facts are before us, that man appeared suddenly; and the oldest men that we find are as perfect and complete as those now living.

The conclusions from the facts.

But perhaps some may say, though the necessary intermediate steps from above downwards certainly fail, they exist from below upwards, from the brute to the man. That this is not the case will be frankly acknowledged even by the supporters of this theory of development, if they are not blinded by their belief in the infallibility of their doctrine.

Nowhere, in the older deposits, is an ape to be found that approximates more closely to man, or a man that approximates more closely to an ape, or perhaps a man at all. The same gulf which is found

An undiminished gulf between the ape and the man.

to-day between man and the ape, goes back with undiminished breadth and depth to the tertiary period. This fact alone is sufficient to make its untenableness clear to every one who is not penetrated by the conviction of the infallibility of the theory of the gradual transmutation and pro-

Back to the tertiary period

gressive development of all organized creatures. This theory tolerates nothing permanent, nothing stationary.

No approximation between the ape and the man since the end of the ice period.

If, however, we now find one of the most man-like apes (gibbon), in the tertiary period, and this species is still in the same low grade, and side by side with it at the end of the ice period, man is found in the same high grade as to-day, the ape not having approximated more nearly to the man, and modern man not having become further removed from the ape than the first man, everyone who is in a position to draw a right conclusion can infer that the facts contradict a theory of constant progressive development, and ceaselessly increasing variation from generation to generation, as sharply as it is possible to do, inasmuch as, instead of such variability, invariability enduring for thousands of years unmistakably appears in many kinds of plants and animals.

The brains of the ape and the man compared.

How wide the gulf is which separates the ape from the man we can best conclude from the figures we have relating to the size of their respective brains. According to M. Vogt, the greatest of all apes, the gorilla, has a brain of 30·51 cubic inches; while the medium size, in the case of the largest brains of the Australian natives, who stand lowest on the list of races in respect to the size of the brain, amounts to 99·35 cubic inches; the chimpanzee and ourangoutang

have a brain of still smaller size, in the males from 25·45 to 27·34 cubic inches. The brain of the apes most like man, therefore, does not amount to quite a third of the brain of the lowest races of men; it is not half the size of the brain of a new-born child.

If, however, we regard ourselves as better able to judge of the significance of these figures by the differences that are found among men, and take the average for the different races of men furnished by Dr. Davis as a basis,¹ we find that the average size of the largest European skulls is 111·99 cubic inches; that of the Australian, 99·35 cubic inches: the difference between the two, representing the maximum and the minimum, is therefore 111·99—99·35, or 12·64 cubic inches; while the difference between Australians and the gorilla is found to be 99·35—30·51, or 68·84 cubic inches.

The
differences
among men.

From these figures the value of the oft-repeated assertion that the difference between the highest and the lowest races of men is not less than between men and the highest apes, may be estimated.

The advocates of the theory of the descent of man from the brute assure us we shall find such missing links in Asia, where stone implements have been discovered like those found in Europe, but nothing that indicated a lower or remoter stage of

Will the
missing links
be found in
Asia?

¹ Thesaurus Craniorum. Catalogue of the skulls of the various races of man in the collection of Joseph Barnard Davis, M.D., F.S.A. London, 1867.

Incon-
sistency of
the
advocates of
the theory of
develop-
ment.

mankind. Here may be the place to point out how completely contradictory it is, in connection with this theory of development, for its promoters to point always to Asia as the starting point of the human race. For long before the rise of a creature that deserves the name of man in Europe, as well as in Asia, constant development had, according to their theory, worked up the animal kingdom to the ape. Hence, there is not the least ground, according to this theory, for believing that the primitive European was not developed in Western Europe, or that Asia only should be favoured with this result, for, as Darwin says, natural selection, "daily and hourly throughout the whole world and at all times, is busy with the variation and perfecting of every organic creature." According to this theory, these missing links between apes, or the common ancestor of apes, and man, must be found in Europe as well as in Asia, if man has this origin.

Natural
history alone
the stand-
point of the
inquiry.

The foregoing discussions have sought to answer the question of the age and origin of man, so far as it can be answered from the standpoint of natural history alone, as far as it is capable of treatment as a question of natural science. In this, as in all the problems of natural science, the important matter is to collect and set forth facts which furnish us with a conclusion when and how this event, which we may conveniently describe as the

rise of man, occurred. All conjectures or theories on the subject must be tested by these facts; and we dare not regard any as admissible which contradict the facts.

Now we have ascertained the following facts, as the foregoing inquiries prove:—

The facts
ascertained.

1. The age of man is small, extending only to a few thousand years.

2. Man appeared suddenly: the most ancient man known to us is not essentially different from the now living man.

3. Transitions from the ape to the man, or the man to the ape, are nowhere found.

If we compare the two theories mentioned above as the only conceivable ones as to the origin of man, we find that the first, which maintains the sudden appearance of man as a perfect being, is in accordance with all the facts; while the second, which maintains the gradual formation of man from the animal kingdom, by an interminable number of intermediate stages in endlessly long periods of time, comes into most decided collision with the facts in all its utterances. If the advocates of this theory contend that facts favourable to it will one day be discovered, we will not quarrel with them about their faith; only they must not demand the acceptance of their theory by any one until the

Comparison
of the two
theories.

The theory
of develop-
ment in
conflict with
the facts.

discovery takes place, and in so far they should do honour to the truth by acknowledging that the facts hitherto ascertained render their theory an impossible one for all who render homage to the principle on which alone useful progress in natural science is possible, viz., that without disparagement to any possible later discoveries, only that can be accepted as true which corresponds to known facts, by no means can that which contradicts them be admitted.

Acceptance
of the theory
on the
ground of
the probable
future
discovery of
facts in proof
cannot be
claimed.

Whoever desires credence for such a theory, because he believes that the facts that favour it will one day be forthcoming, has *ipso facto* abandoned the ground of natural science, in which faith should not be demanded, least of all with reference to subjects that are accessible to our knowledge, and concerning which, as in the question before us, facts enough are already known that lead us not only to a quite decided but to an entirely opposite conclusion.

The
Scriptural
account of
man true.

The conclusion we are led to is that the scriptural account of man, which is one and self-consistent, is true; that God made man in His own image, fitted for fellowship with Himself, and favoured with it; in a state from which man has fallen, but to which restoration is possible through Him who is the brightness of the Father's glory, and the express image of His person.

Why we
accept it.

This account of man we accept by faith, because it is revealed by God, is supported by adequate evidence, solves the otherwise insoluble problems

not only of science and history, but of inward experience, and meets our deepest need. We believe there was a first man, from whom all other men are descended, who was the first head of the human race,—that there is a second Man in whom God is incarnate, who is the source of undying hope to all who become united to Him.

What we
believe.

Where science forsakes us, revelation meets us with an account of man's origin, state, and destiny, which is adequate and coherent, which explains all the facts, and commends itself alike to the reason and the conscience; and the more it is sifted and examined, the more well-founded and irrefragable does it prove to be.

Revelation
meets us
where
science
forsakes us.



THE ANTIQUITY OF MAN,

Historically Considered.

BY THE

REV. GEORGE RAWLINSON, M.A.

*(Camden Professor of Ancient History in the University of Oxford,
and Canon of Canterbury),*

AUTHOR OF

“THE FIVE GREAT ORIENTAL MONARCHIES;” “HISTORY OF ANCIENT EGYPT;”
“THE RELIGIONS OF THE ANCIENT WORLD;”
“THE ORIGIN OF NATIONS,” ETC.



THE RELIGIOUS TRACT SOCIETY:

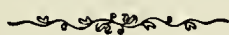
56, PATERNOSTER ROW; 65, ST. PAUL'S CHURCHYARD; AND
164, PICCADILLY.

Argument of the Tract.

Babylonian, Indian, Iranian, Phœnician, Israelitish, Lydian, Phrygian, Chinese, and Egyptian history is surveyed, and the conclusion arrived at that the history of man may be traced from authentic sources a little beyond the middle of the third millennium before our era ; that man has existed in communities, under settled government, for about 4500 years. The primitive condition of man must be determined before the duration of the prehistoric period can be estimated.

The mythology of almost all nations, Scripture, and Babylonian documents represent primitive man as civilised. No traces of savage man have been found in what tradition makes the cradle of the human race. There is no evidence of savages ever having civilised themselves. The civilisation found in Egypt B.C. 2600 might have been reached in 500, or, at most, 1000 years, if primitive man began his history in a state of incipient civilisation. Assuming that there was a primitive language from which all others have been derived, there is no difficulty in conceiving that all the 4000 languages said to exist now have been developed within 5000 years. Nor do the existing diversities of physical type require us to assume a vast antiquity for man. The early Egyptian remains indicate five types. The rest may have been developed subsequently. The growth of population and the waste spaces of the earth, and the absence of architectural remains earlier than the third millennium B.C. are shown to be in favour of "the juvenility" of man. The conclusion is arrived at that the prehistoric period cannot be fairly estimated at much less than 1000 years. The uncertainty of the chronology of the period between the Flood and Abraham is pointed out. If the Flood be placed about B.C. 3600, there will be time for the state of things found in Egypt 1000 years later. Two thousand years may be added for the period between the Creation and the Flood.

THE ANTIQUITY OF MAN HISTORICALLY CONSIDERED.



I.



THE problem of the antiquity of man has to the historian two stages. In the first, it is a matter wholly within the sphere of historical investigation, and capable of being determined, if not with precision, at any rate within chronological limits that are not very wide, *i.e.*, that do not exceed a space of two or three centuries. In the further or second stage, it is only partially a historical problem; it has to be decided by an appeal to considerations which lie outside the true domain of the historian, and are to a large extent speculative; nor can any attempt be made to determine it otherwise than with great vagueness, and within very wide limits—limits that are to be measured not so much by centuries as by millennia.

Antiquity of man. Two stages of the problem.

The two stages which are here spoken of correspond to two phrases which are in ordinary use—"Historic man" and "Prehistoric man." "Historic man" means man from the time that he has left contemporary written records of himself, which have in any shape come down to us, and are intel-

1. Antiquity of historic man.

2. Antiquity of prehistoric man.

ligible. "Prehistoric man" means man anterior to this—man during the time that he wrote no records of himself, or none that are intelligible, or none that have reached our day. History proper deals with the later stage, the stage for which written records exist; but the historian has always to acknowledge a precedent time, to take it into account, and retrospectively glance at it.

Antiquity of
historic man
considered.

In pursuing the present inquiry, we shall, first of all, examine the question, to what length of time history proper goes back—for how many centuries or millennia do the contemporary written records of historic man indicate or prove his existence upon the earth?

Nations of
the New
World set
aside.

And here, in the first place, the inquiry may be restricted to the nations of the Eastern Hemisphere. The New World, at the time of its discovery by Europe, possessed nothing that deserves the name of history. The picture-writings of the Atzees were not records, but symbolic representations capable of being variously interpreted, and only supposed to become intelligible by the application to them of oral tradition.¹ Thus the native races of America, prior to the Spanish conquests, belong to the category of "prehistoric" and not of "historic man," and therefore do not come under our present head of inquiry.

Of the Old World we possess abundant records, thoroughly intelligible, which are universally ad-

¹ See Prescott, *Conquest of Mexico*, Vol. I., p. 82.

mitted to go back to a period not far short of three thousand years from the present time. One record, equally easy to read, carries back the origin of one nation, the Hebrews, at least two hundred years earlier. The Hebrews had at that time been living, according to their own belief, for more than four centuries under subjection to another much more powerful nation, the Egyptians, whose existence is thus thrown back to a date more than three thousand six hundred years from to-day. The native records of Egypt, which are not, however, allowed on all hands to be intelligible, confirm this view, and are even thought to indicate for the Egyptians a still higher antiquity. The cuneiform inscriptions of Babylonia and Assyria, the intelligibility of which is also disputed, in the opinion of those who profess to read them, begin about B.C. 2400. On the whole, it may be said to be the general opinion of scholars that history proper can be traced back a space of at least four thousand years; though the sceptics, who refuse to believe in hieroglyphic or cuneiform decyphering, would contract the period, and deny that any history exists, on which we can rely, or to which we can attach definite dates, earlier than about B.C. 1000—the time of Sheshonk I. in Egypt, of Solomon in Judea, and of the Dorian conquests in Greece.

Minimum antiquity of nations of the Old World.
1. Generally accepted view.
2. Extreme sceptical view.

It is not our purpose to entrench ourselves within the lines traced out by Sir Cornwall Lewis

Extreme
sceptical
view set
aside.

in his two principal works, *The Astronomy of the Ancients*, and *The Credibility of Early Roman History*. We desire to conduct the present inquiry in a fair, candid, and impartial spirit. We shall, therefore, accept hieroglyphical and cuneiform discovery as *faits accomplis*; we shall reject the extreme sceptical view, and we shall proceed to inquire what contemporary literature, or other valid authority, teaches as to the age of those nations of the Old World which are clearly the most ancient, and which alone dispute among themselves the palm of antiquity.

The most
ancient
nations.

These nations, according to the general consent of modern historical critics, are the Egyptians, the Babylonians, the Israelites, the Iranians, the nations of Asia Minor, the Phœnicians, the Indians, and the Chinese.

Alleged
antiquity of
the Baby-
lonians.

The highest antiquity to which any of these nations ever pretended would seem to be that which was claimed for themselves by the Babylonians. Their astronomers, they said, had observed the heavenly bodies for a space of above 450,000 years. Their first king had ascended the throne 467,581 years before the accession of Pul, or about B.C. 468,330. Babylon had had seven dynasties during this space. The first, consisting of ten kings, had reigned 432,000 years, or an average of 43,200 each. The next, in which there were eighty-six kings, had occupied the throne for 34,080 years,

which would give an average of 396 years to each. The remainder had filled a space not much exceeding 1500 years, and had had short reigns, not averaging so much as thirteen years apiece.

Historical criticism has at all times rejected this chronology as incredible. There is no historian of repute who has not set aside the first dynasty as mythical, and but one¹ who has found anything historical in the second. Critics generally draw a sharp line between the second and third dynasties of Berosus, and regard the Babylonian history of this writer as properly commencing with his third or Median dynasty, about B.C. 2250, or (according to an amended reading) B.C. 2460.

Generally
rejected by
critics.

It was pointed out long ago by Eusebius,² the Church historian, that no events were chronicled as belonging to the enormous space of 466,080 years, by which Babylonian chronology exceeded the ordinary reckoning, and that a chronology which is unsupported by facts of history is worthless.

No history
accompanies
the chro-
nology.

The allegation, that sidereal observations had been made at Babylon for above 450,000 years is sufficiently met by the fact that when Aristotle commissioned his disciple, Callisthenes, to obtain for him the astronomical lore of Babylon, on Alexander's occupation of the city, the observations were found to extend, not to 450,000 years, but to 1903.

¹ The late Baron Bunsen.

² *Chron. Can.*, Pars. I. c. 2, s. 7.

Moderate
chronology
of the
Babylonian
monuments.

Earliest
fixed date
B.C. 2286.

Sanskritic
Indians
have no
history till
B.C. 1600, if
even before
B.C. 1200.

If we turn from the reports of what Babylonian writers of a comparatively late period declared concerning the antiquity of their nation, to the native records which modern research has recovered from the Mesopotamian regions, we shall find them favour a very moderate date for the commencement of Babylonian sovereignty. The earliest Babylonian date contained in a cuneiform document is that of 1635 years before the seventeenth year of Asshur-bani-pal, which gives for the first Elamitic invasion of Babylonia the year B.C. 2286. Only about five monumental kings can be placed in the period which preceded this conquest,¹ whence it would follow that the monuments require no earlier date for the commencement of the Chaldean monarchy than B.C. 2400. There is a tolerably near agreement between this date and the chronology of Berosus, if we reject his first and second dynasties as fabulous.

An antiquity, almost as remote as that claimed for themselves by the Babylonians, has sometimes been ascribed to the Sanskritic conquerors of India. But the latest researches of the best scholars are completely adverse to all such pretentions. M. François Lenormant, in his *Manual of Ancient Oriental History*, which is used widely as a textbook in France, assigns the first entrance of the Sanskritic Indians into the peninsula of Hindu-

¹ G. Smith, *History of Babylonia*, p. 10.

stan¹ to no earlier a date than B.C. 2500, and regards their *history* as commencing with the “War of the Ten Kings,”² somewhere between B.C. 1600 and B.C. 1500. Professor Max Müller scarcely goes back so far. In his *Ancient Sanskrit Literature* he lays it down³ that four periods of composition may be traced in the Vedas, and that the earliest of these—the Chandas period—to which the most ancient of the Vedic hymns belong, covered the space between B.C. 1200 and B.C. 1000. Of authentic Indian history before this time he does not find in the native literature any trace.

The Iranians had in primitive times a close connection with the Sanskritic Indians, and the earliest glimpses that we obtain of them reach back to about the same date. But *Iranic history* cannot be regarded as commencing before B.C. 820, when the Medes first came into contact with the Assyrians. Portions of the Zendavesta may be six or seven centuries earlier; but Dr. Martin Haug, the best living *Iranic* scholar, does not postulate for the most ancient of the “Gathas” a higher antiquity than B.C. 1500.⁴

Iranian
history does
not begin
till B.C. 820

The Phœnicians are regarded by some writers as having migrated from the shores of the Persian Gulf to those of the Eastern Mediterranean about B.C. 2500. The mention of Sidon in the Book of

The
Phœnicians
have no
history till
B.C. 1050.

¹ *Manuel d'Histoire Ancienne*, Vol. III., p. 431.

² *Ibid.*, pp. 473–5.

³ Pages 301–5.

⁴ *Essays on the Sacred Language, etc., of the Parsees*, p. 225.

Genesis certainly favours the view that their settlement in Syria was of early date; but we have nothing that can be called authentic history in connection with the Phœnician people much more remote than the reign of David in Judea, or B.C. 1050. The Egyptian monuments, which are copious for the space between B.C. 1600 and 1280, contain no distinct mention of them; and one important authority (Josephus¹) places the foundation of Tyre—which was an event very early in the history of the nation—as late as B.C. 1252. It is not at all clear that the emigration from the Persian Gulf, if it be a fact, preceded B.C. 1500; and it is tolerably evident that the nation enjoyed no great distinction till two centuries later.

The
Israelites
only began
to be a
nation at
the Exodus
or about
B.C. 1300.

The Israelites, as a nation, date from the exodus, which can scarcely be placed later than B.C. 1300, or earlier than B.C. 1600. The later date is the more probable. They believed that they had sojourned in Egypt 430 years, their forefather Jacob having entered the country about B.C. 1730. Before this, they possessed nothing beyond a family history. The chronology attached to this history placed the call of Abraham 215 years before the descent of Jacob into Egypt, or about B.C. 1945.

There were two nations of Asia Minor which claimed a considerable antiquity,—the Lydians and the Phrygians. The traditions of the Lydians

¹ *Ant. Jud.*, viii. 3.

gave them three dynasties before their conquest by Cyrus, and assigned to the third of these 170 years, to the second 505 years, and to the first an indefinite term.¹ The date for the accession of the second dynasty was B.C. 1229; that for the accession of the first cannot well have been lower than B.C. 1400. As for the Phrygians, they were thought by some to be the most ancient people in all the world.² They had a tradition of the deluge,³ and believed their native monarchy to have been among the earliest instituted after that event. Of actual kings they could, however, mention no more than eight before their conquest by Cyrus, so that they did not carry back their own consecutive history beyond B.C. 820. If, however, the Trojans are to be accounted a branch of the Phrygians, the Phrygian nationality must be allowed to date from some four or five centuries before this, since the Homeric poems were probably composed about B.C. 1000, and the war which they celebrate implies a flourishing Trojan kingdom for some centuries previously.

Lydian
history may
mount to
B.C. 1400;
Phrygian to
about the
same time.

The first European inquirers into Chinese history came to the conclusion that China possessed an authentic and consecutive history commencing with the reign of a certain emperor Yaou, who ascended the throne in B.C. 2356. This opinion

Chinese
history once
thought to
extend to
B.C. 2356.

¹ Herod. i. 7-25.

² *Ibid.*, ii. 2.

³ See *Bible Educator*, Vol. I., pp. 33-8.

maintained its ground for some 300 years ; but recent investigations have thrown discredit upon the work which contained the earlier portion of their supposed history,¹ and have reduced the date for the commencement of the authentic Chinese annals from B.C. 2356 at any rate to B.C. 1154. It is not even certain that, when we have reached B.C. 1154, we are on safe ground. One important authority² maintains that “the legendary period of 1202 years from B.C. 2356 to B.C. 1154 is followed by a semi-mythical, semi-historical period, which lasts from B.C. 1154 to B.C. 781,” and that it is not until this last-named date is reached that trustworthy history commences.³

But now not
carried beyond
B.C. 781, or
at furthest
B.C. 1154.

Astronomical date of
B.C. 15,000
rejected.

Astronomical grounds have been alleged⁴ for carrying back the *origines* of the Chinese to the remote date of B.C. 15,000. As the grounds in question are entirely outside of the domain of history, they do not require any notice in this place.

¹ See an Article contributed to the *Leisure Hour* by Dr. Edkins in 1876, and republished in the author's *Origin of Nations*, pp. 262—272.

² Mr. Mayers in his *Chinese Reader's Manual*, published 1874.

³ Since the bulk of the above was in print, Professor Legge has kindly informed me that he regards Chinese history as “well authenticated” up to B.C. 1154, and that he does not altogether reject the authority of the “Book of History,” which begins professedly in B.C. 2356. There is a prehistoric period anterior to this, reaching back as far as B.C. 3300 ; beyond which “there is nothing but mist.” These views do not conflict with the final results arrived at in the present “Tract.”

⁴ By Dr. Gustav Schlegel in his *Uranographie Chinoise*.

We may remark, however, that the Chinese themselves do not claim an earlier origin for their astronomy than about B.C. 2000 ; and that the one eclipse of the sun, which they place about this date, having been examined into by the light of modern astronomical science, has been pronounced "unsatisfactory."

There remains for consideration the question of the antiquity of "historic man" in Egypt. Driven from all their other positions, the advocates of an extreme antiquity for the human race, entrench themselves upon Egyptian soil, and maintain that there, at any rate, in the region fertilized by the life-giving Nile, man can be proved to have existed under settled government, and in a fairly civilized community, from a time removed almost seven millennia from the present day. There is no doubt that Egypt was among the earliest, if not the very earliest, of civilized communities. Sacred and profane testimony agree in the assertion of this fact. But the actual date to which Egyptian history ascends is a question of much difficulty and delicacy, very variously determined by those best acquainted with the data on which the problem depends, and no otherwise to be settled than by a careful consideration of all the data in our possession, and, where they differ, by a correct critical estimate of their relative value.

The data themselves are of three distinct kinds. They consist, first, of the accounts given by Egyp-

Antiquity of historic man in Egypt requires to be carefully examined.

Three sets of data for Egyptian antiquity.

tian *ciceroni* to Greek travellers, who visited their country for the purpose of historic inquiry, and who were particularly curious to know how long the Egyptian monarchy had lasted; secondly, of the reported statements of a native historian of repute, Manetho, who, shortly after Alexander's conquest of the country, wrote its history for the benefit of the Greeks; and thirdly, of such scattered notices as have been recovered from Egyptian papyri and stone monuments.

1. Reports
of Greek
travellers.

The earliest Greek travellers in Egypt brought back with them accounts of an antiquity of settled government in that country, very much beyond that which the Egyptians of later times seem to have claimed. Solon was informed that the city of Saïs in the Delta had been founded eight thousand years before the date of his visit,¹ which was probably about B.C. 570. The Egyptian archives were represented to him as extending to at least a thousand years earlier.² Hecataeus and Herodotus³ were inclined to believe that Egyptian history could be traced back without a break for 345 generations of men, or, according to the estimate of Herodotus, for 11,500 years. The accession of Manes, the supposed first king, was placed by Herodotus about B.C. 12,000. When Diodorus Siculus paid his visit to Egypt, in the reign of

¹ Plat. *Timæus*, p. 21 E (ed. Stallbaum).

² *Ibid.*

³ Herod. ii. 142, 143.

Augustus Cæsar, the Egyptian pretensions had been considerably abated; but still he received the impression that the reign of Manes belonged to a time anterior by above 4000 years to the date of his stay.

It is uncertain whether the statements which the Greek writers report, were really made by the responsible persons to whom they are attributed. Greek travellers, who never knew any other language than their own, must have communicated with the Egyptian priests by means of professional interpreters—a class of persons not likely to have been at all superior to the dragomen of the present day. Information filtered through this imperfect medium would naturally suffer by the process; and it is quite possible that the enormous antiquity reported by Solon, Hecataeus, and Herodotus, as claimed for Egypt by its priestly colleges, may have had its origin, not in the serious statements of those learned bodies, but in the mistakes or exaggerations of the persons who professed to convey their statements to the Hellenic inquirers.

May have
been
mistakes of
professional
interpreters.

No faith is placed at the present day in the vague estimates of Solon, Herodotus, or Diodorus. It is felt that they may readily have been imposed upon; and it is further felt that their authority, whatever might have been its value had it stood alone, is superseded by the two other sources of information on the subject which, as above remarked, are open to us.

Not now
regarded as
authori-
tative.

2. State-
ments of
Manetho.

Manetho, an Egyptian priest, born at Sebennytus (now Semnoud) in the Delta, about B.C. 300, in the history of Egypt, which he wrote in Greek for the information of the Greeks under Ptolemy Philadelphus, professed to carry back the *origines* of Egypt to a date more than 30,000 years anterior to Alexander the Great. His scheme of mundane chronology is thus presented by Eusebius¹ :—

	YEARS.
1. Reigns of the gods ...	13,900
2. Reigns of heroes ...	1,255
3. Reigns of other kings ...	1,817
4. Reigns of 30 Memphites ...	1,790
5. Reigns of 10 Thinites ...	350
6. Reigns of Manes and heroes	5,813
7. Reigns of the 30 dynasties	5,000(?)
Total.....	29,925

Moderns
discard six-
sevenths of
his scheme,
but retain
one-seventh.

The wonderful mixture of things human and divine in this list has generally been regarded as discrediting the greater portion of it; but modern critics, for the most part, unwilling to give up the whole, have drawn a line between the sixth heading and the seventh, content to surrender gods and heroes and Manes, and even three dynasties of (apparently) human kings, provided that they may retain the “thirty dynasties,” beginning with Menes and ending with Nectanebo II. The number of years assigned to these dynasties by

¹ *Chron. Can.*, Pars. I. c. 20.

Manetho is very uncertain, but probably exceeded 5000. Thus, if Manetho is to be our guide, Egyptian *history* must be supposed to go back B.C. 5300, and “historic man” must be regarded as traceable upon the earth for more than 7000 years.

Why, in an age which has discredited the great mass of historical writers, when they cease to speak from their own knowledge, and report the traditions of their forefathers—an age which questions the existence of Homer, and makes Greek history begin with the First Olympiad, which views Roman history as credible only from the time of the Samnite wars, and which especially rejects dynastic lists unaccompanied by historical facts—Manetho should be made an exception to the ordinary rule, and upheld as well nigh infallible, is a matter hard of explanation. One would not willingly suppose that the extraordinary deference paid to his authority originated in a wish to convict the Bible of error; but it is difficult to assign any other reason.

The reliance placed on his lists extraordinary and uncritical.

For the character of Manetho's history, as it has come down to us, is exactly that which is put aside as worthless generally. Manetho, writing in the third century before Christ, professes to deliver to us an exact account of the number of the Egyptian dynasties, the length of time during which each dynasty occupied the throne, and (in most instances) the names and order of the kings, with the exact number of years that each reigned. He

Character of his (so-called) history.

carried his lists back to a date which he regarded as preceding his own time by more than 5000 years. But this extraordinarily long and perfect chronological scheme was, so far as appears, accompanied by only the merest pretence of an historical narrative. We transcribe a dynasty of Manetho's, with the events attached to it.¹

SECOND DYNASTY OF NINE KINGS.

		YEARS.	
Specimen.	1. Bochus (Boethus)	38	The earth gaped near Bubastus, and many perished.
	2. Cechous (Cæechós)	39	Apis and Mnevis, and the he-goat at Mendes were accounted gods.
	3. Biophis (Binôthris)	47	It was decreed that women might exercise the sovereign power.
	4. Tlas 	17	} Nothing remarkable occurred.
	5. Sethenes 	41	
	6. Chæres	17	
	7. Nephhercheres 	25	The Nile flowed for eleven days mixed with honey.
	8. Sesôchris 	48	He was five cubits high and three broad.
	9. Cheneres 	30	Nothing remarkable occurred.
	Total ...	302	

¹ See the *Chron. Can.* of Eusebius, Pars. I., c. 20, § 4; and compare Africanus ap. Syncell. *Chronograph.* pp. 54, 55.

If it be said that this is the account of an epitomiser, and that Manetho doubtless recorded many other facts as having occurred in the 302 years, the answer is, first, that it is the account of two independent epitomisers, and secondly, that we have no evidence of Manetho having mentioned any other facts. Both epitomisers give exactly the same account.

Manetho's history is sometimes said to be authenticated by the monuments. How much, or rather how little, they authenticate it will be shown when we come to consider their evidence. At present we wish to note that Manetho constantly exaggerates his numbers beyond the data contained in the monuments.

Manetho's numbers exaggerated of the numbers on the monuments.

(a) Manetho allows for no contemporary dynasties. The monuments make it evident that several of his dynasties were contemporary.¹

Instances.

(b) Manetho makes no allowance for contemporary reigns within a dynasty. The monuments show that such reigns frequently occurred; *e. g.* in the nineteenth dynasty, Seti I. associated his son, Rameses II., when he was ten years old, probably in his own eleventh year, and reigned conjointly with him for about twenty years, after which Rameses continued to reign for about thirty-six years longer. Manetho assigns to the two

¹ Lenormant, *Manuel d'Histoire Ancienne*, Vol. I., pp. 348, 349, 356.

kings a space of 121 years; the monuments make the space about 77.

(c) Manetho habitually enlarges the duration of reigns. Out of thirty-seven cases, where we can compare his numbers with those of the Turin papyrus, he is in excess twenty-two times, and in deficiency only six times. His numbers for the thirty-seven reigns added together amount to 984 years; those of the Turin papyrus to 615 years.¹ Thus he is here considerably more than one-third in excess.

Manetho
must
throughout
be tested
by the
monuments.

The result is, that no confidence can be placed in any one of Manetho's numbers, unless it be confirmed by the monuments—an unusual occurrence. Still less can any confidence be placed in his general scheme, his artificial arrangement of the Egyptian monarchs into exactly *thirty* dynasties, represented as consecutive. We must test Manetho at each step by the monuments, and accept his statements only so far as they obtain some sort of monumental confirmation. In this way only can we acquire any reasonable estimate of the probable antiquity of the monarchy which grew up, certainly at a very early date, in the valley of the Nile.

Evidence of
the
monuments.
1. For the
New Empire.

Now the monuments are fairly complete, and consecutive from a time which Manetho called the commencement of the New Empire, and made to synchronise with the accession of his eighteenth

¹ See the Author's *History of Egypt*, Vol. II., pp. 511-3.

dynasty. From this period, which is well marked upon the remains, we have a list of sixty-three kings, nearly the same number as that given by Manetho. The reigns of many are short, and some ruled conjointly; but we cannot well assign to them a less space than 1000 or 1100 years, which would carry back the foundation of the New Empire to B.C. 1527 or B.C. 1627. Beyond this the monuments show many gaps, and are, comparatively speaking, scanty. We have no contemporary records of Manetho's first three dynasties, nor of his seventh, eighth, ninth, nor tenth; nor again of his fourteenth, fifteenth, or sixteenth. The earliest Egyptian monument is one of Snefru, first king of Manetho's fourth dynasty. This is followed by the Pyramids and the long series of contemporary tombs at Ghizeh, belonging to the later kings of the same dynasty. Monuments continue numerous under the fifth dynasty and the sixth. They are then absolutely wanting until the eleventh, which has left a few. For the twelfth they are abundant. The main witness for the thirteenth is the Turin papyrus, which is, however, confirmed by a certain number of inscriptions; but, after this, inscriptions fail until quite the end of Manetho's seventeenth dynasty. Thus, out of Manetho's first seventeen dynasties, the only ones for which we have the evidence of contemporary monuments are the fourth, fifth, and sixth; the eleventh, twelfth, and

2. For the
Old Empire.

3. For the
Middle
Empire.

thirteenth; and the seventeenth. The point for consideration now is, how much time we are bound to allow for these.

Probable
duration of
the Middle
Empire.

Manetho made three dynasties of Hyksôs, or Shepherd Kings, his fifteenth, sixteenth, and seventeenth, and assigned to them a period which is variously stated at 511 and at 953 years.¹ The monuments recognise one dynasty only, and are incompatible with its having held the dominion of Egypt for more than two, or at most three, centuries. Canon Cook has shown strong grounds for assigning to the Hyksôs period, or "Middle Empire," no longer a space of time than 250 years.² It may be questioned whether two centuries would not be a better estimate, since the dynasty was one of only five or six kings. The Middle Empire may, therefore, be regarded as having commenced about B.C. 1727 or 1827.

Probable
duration of
the Old
Empire.

The monumental dynasties of the Early Empire are six in number. The first of them, Manetho's fourth, consisted of either five or six kings, whose united reigns amounted, according to Manetho, to 268 years; according to the Turin papyrus, to 102. The second, Manetho's fifth, comprised seven kings, whose united reigns covered a space of about 120 years. The third, Manetho's sixth,

¹ Josephus says 511 (*Contr. Ap.* i. 14), Africanus (ap. Syncell. *Chron.* p. 60 B) 953.

² See the *Speaker's Commentary*, Vol. I., pp. 447, 448.

contained five or six monarchs, and may be allowed about the same duration. The fourth, Manetho's eleventh, consisted of either six or eight kings, and probably held the throne for about a century and a half. The fifth, Manetho's twelfth, was a dynasty of great importance. It numbered nine sovereigns, and ruled for about 190 years. The sixth, Manetho's thirteenth, comprised numerous kings, who reigned on an average about three years apiece. The earlier monarchs of the list may have been independent; but the later ones were probably tributary to the Shepherds, and contemporary with them. We need not allow the dynasty more than 100 years of independent rule.

The result is, that for the "Old Empire" we must allow a term of about seven centuries, or seven centuries and a half; whence it follows that we must assign for the commencement of Egyptian monarchy about the year B.C. 2500, or from that to B.C. 2650. This is the furthest date to which "History Proper" can be said, even probably, to extend. It is capable of some curtailment, owing to the uncertainty which attaches to the real length of the earlier dynasties, but such curtailment could not be very considerable.

Commence-
ment of
Egyptian
monarchy
about B.C.
2500 or 2650.

The history of man may then be traced from authentic sources a little beyond the middle of the third millennium before our era. It is true and safe to say that man has existed in communities under

History
therefore
goes back
about 4500
years.

settled government for about four thousand five hundred years ; but it would not be safe to say that he had existed in the condition which makes history possible for any longer term.

II.

Antiquity of
prehistoric
man.

THE first stage of the inquiry here ends. It remains that we address ourselves to the second and more difficult question—What is the probable age of “prehistoric man,” for how long a time is it reasonable to suppose that mankind existed on the earth before states and governments grew up, before writing was invented, and such a condition of the arts arrived at as we find prevailing in the time when history begins, *e.g.*, in Egypt at the Pyramid period, about B.C. 2600, and in Babylonia about two centuries later?

Opinion of
Professor
Owen.

Professor Owen is of opinion that the space of “7000 years is but a brief period to be allotted to the earliest civilized and governed community”¹—that of Egypt; nay, he holds that such a period of “incubation,” as he postulates, is so far from extravagant that it is “more likely to prove inadequate” for the production of the civilization in question.² This is equivalent to saying that we

¹ See an “Address” delivered to the International Congress of Orientalists in 1874, reported in the *Times* of September 21 of that year.

See the Author’s *Origin of Nations*, p. 260.

must allow 2,500 years for the gradual progress of man from his primitive condition to that whereto he has attained when the Pyramid kings bear sway in the Nile valley. Other writers have proposed a still longer term, as 10,000, 15,000 or even 20,000 years.¹

Of Baron
Bunsen.

Now, here it must be observed, in the first place, that no estimate can be formed which deserves to be accounted anything but the merest conjecture, until it has been determined what the primitive condition of man was. To calculate the time occupied upon a journey, we must know the point from which the traveller set out. Was then the primitive condition of man, as seems to be supposed by Professor Owen, savagery, or was it a condition very far removed from that of the savage?

Question of
the primitive
condition of
man.

“The primeval savage” is a familiar term in modern literature; but there is no evidence that the primeval savage ever existed. Rather, all the evidence looks the other way. “The mythical traditions of almost all nations place at the beginnings of human history a time of happiness and perfection, a ‘golden age,’ which has no features of savagery or barbarism, but many of civilization and refinement.”² The sacred records, venerated alike by Jews and Christians, depict antediluvian man as from the first “tilling the ground,” “building cities,” “smelting metals,” and “making

The
primitive
condition of
man not
savagery.

Proofs.

¹ Bunsen's *Egypt's Place in Universal History*, Vol. v., p. 103.

² See the Author's *Origin of Nations*, pp. 10, 11.

musical instruments.” Babylonian documents of an early date tell, similarly, of art and literature having preceded the Great Deluge, and having survived it.¹ The explorers who have dug deep into the Mesopotamian mounds, and ransacked the tombs of Egypt, have come upon no certain traces of savage man in those regions, which a wide-spread tradition makes the cradle of the human race. So far from savagery being the primitive condition of man, it is rather to be viewed as a corruption and a degradation, the result of adverse circumstances during a long period of time, crushing man down, and effacing the Divine image wherein he was created.

No emerging
from
savagery
except by
contact with
civilization.

Had savagery been the primitive condition of man, it is scarcely conceivable that he could have ever emerged from it. Savages, left to themselves, continue savages, show no sign of progression, stagnate, or even deteriorate. There is no historical evidence of savages having ever civilized themselves, no instance on record of their having ever been raised out of their miserable condition by any other means than by contact with a civilized race. The torch of civilization is handed on from age to age, from race to race. If it were once to be extinguished, there is great doubt whether it could ever be re-lighted.

Degrees of
civilization.

Doubtless, there are degrees in civilization. Arts

¹ Berosus, Fr. 7 ; Abydenus, Fr. 1.

progress. No very high degree of perfection in any one art was ever reached *per saltum*. An “advanced civilization”—a high amount of excellence in several arts implies an antecedent period during which these arts were cultivated, improvements made, perfection gradually attained. If we estimate very highly the civilization of the Pyramid period in Egypt, if we regard the statuary of the time as equalling that of Chantrey,¹ if we view the Great Pyramid as an embodiment of profound cosmical and astronomical science,² or even as an absolute marvel of perfect engineering construction, we shall be inclined to enlarge the antecedent period required by the art displayed, and to reckon it, not so much by centuries, as by millennia. But if we take a lower view, as do most of those familiar with the subject—if we see in the statuary much that is coarse and rude, in the general design of the Pyramid a somewhat clumsy and inartistic attempt to impress by mere bulk, in the measurements of its various parts and the angles of its passages adaptations more or less skilful to convenience, and even in the “discharging chambers” and the “ventilating shafts” nothing very astonishing, we shall be content with a shorter term, and regard the supposed need of millennia as an absurdity.

Civilization
of the
Pyramid
period not
very high.

There is in truth but one thing which the Egyp-

¹ Professor Owen in the author's *Origin of Nations*, p. 258.

² Piazzzi Smith's *Antiquity of Intellectual Man*.

tians of the Pyramid period could really do surprisingly well; and that was, to cut and polish hard stone. They must have had excellent saws, and have worked them with great skill, so as to produce perfectly flat surfaces of large dimensions. And they must have possessed the means of polishing extremely hard material, such as granite, syenite, and diorite. But in other respects their skill was not very great. Their quarrying, transport, and raising into place of enormous blocks of stone is paralleled by the Celtic builders of Stonehenge, who are not generally regarded as a very advanced people. Their alignment of their sloping galleries at the best angle for moving a sarcophagus along them may have been the result of "rule of thumb." Their exact emplacement of their pyramids so as to face the cardinal points needed only a single determination of the sun's place when the shadow which a gnomon cast was lowest.

Might have been reached by primitive man, if clever and intelligent, within 500 or 1000 years.

Primitive man, then, if we regard him as made in the image of God—clever, thoughtful, intelligent, from the first, quick to invent tools and to improve them, early acquainted with fire and not slow to discover its uses, and placed in a warm and fruitful region, where life was supported with ease—would, it appears to the present writer, not improbably have reached such a degree of civilization as that found to exist in Egypt about B.C. 2600. within five hundred or, at the utmost, a thousand

years. There is no need, on account of the early civilization of Egypt, much less on account of any other, to extend the “prehistoric period” beyond this term.

Mere rudeness of workmanship and low condition of life generally is sometimes adduced as an evidence of enormous antiquity; and the discoveries made in cairns, and caves, and lake-beds, and kjökkenmöddings are brought forward to prove that man must have a past of enormous duration. But it seems to be forgotten that as great a rudeness and as low a savagism as any which the spade has ever turned up still exists upon the earth in various places, as among the Australian aborigines, the Bushmen of South Africa, the Ostiaks and Samoyedes of Northern Asia, and the Weddas of Ceylon. The savagery of a race is thus no proof of its antiquity. As the Andaman and Wedda barbarisms are contemporary with the existing civilization of Western Europe, so the palæolithic period of that region may have been contemporary with the highest Egyptian refinement.

The rudeness of remains found in cairns, caves, lake-beds, etc., no proof of a high antiquity.

Another line of argument sometimes pursued in support of the theory of man's extreme antiquity, which is of a semi-historic character, bases itself upon the diversities of human speech. There are, it is said,¹ four thousand languages upon the earth, all of them varieties, which have been produced

Argument from the diversities of human speech.

from a single parent stock—must it not have taken ten, fifteen, twenty millennia to have developed them?

Argument
answered.

Now here, in the first place, exception may be taken to the statement that “all languages have been produced from a single parent stock,” since, if the confusion of tongues at Babel be a fact, as allowed by the greatest of living comparative philologists,¹ several distinct stocks may at that time have been created. Nor has inductive science done more as yet than indicate a *possible* unity of origin to all languages, leaving the fact in the highest degree doubtful.² But, waiving these objections, and supposing a primitive language from which all others have been derived, and further accepting the unproved statement, that there are 4000 different forms of speech, there is, we conceive no difficulty, in supposing that they have all been developed within the space of five thousand years. The supposition does not require even so much as the development of one new language each year. Now, it is one of the best attested facts of linguistic science, that new languages are being formed continually. Nomadic races without a literature, especially those who have abundant leisure, make a plaything of their language, and are continually changing its

¹ Max Müller, *Lectures on the Science of Language*, First Series, p. 125.

² *Ibid.*, pp. 318-327.

vocabulary. "If the work of agglutination has once commenced," says Professor Max Müller,¹ "and there is nothing like literature or science to keep it within limits, two villages, separated only for a few generations, will become mutually unintelligible." Brown, the American missionary, tells us of some tribes of Red Indians who left their native village to settle in another valley, that they became unintelligible to their forefathers in two or three generations. Moffatt says that in South Africa the bulk of the men and women of the desert tribes often quit their homes for long periods, leaving their children to the care of two or three infirm old people. "The infant progeny, some of whom are beginning to lisp, while others can just master a whole sentence, and those still further advanced, romping together through the live-long day, become habituated to a language of their own. The more voluble condescend to the less precocious, and thus from this infant Babel proceeds a dialect of a host of mongrel words and phrases, joined together without rule, and in the course of one generation the entire character of the language is changed."² Castren found the Mongolian dialects entering into a new phase of grammatical life, and declared that "while the literary language of the race had no

¹ In Bunsen's *Philosophy of Universal History*, Vol. III., p. 483.

² See Max Müller's *Lectures on the Science of Language*, First Series, pp. 53, 54.

terminations for the persons of the verb, that characteristic feature of Turanian speech had lately broken out in the spoken dialects of the Buriatic and in the Tungusic idioms near Njestschinsk in Siberia.”¹ Some of the recent missionaries in Central America, who compiled a dictionary of all the words they could lay hold of with great care, returning to the same tribe after the lapse of only ten years, “found that their dictionary had become antiquated and useless.”² When men were chiefly nomadic, and were without a literature, living moreover in small separate communities, linguistic change must have proceeded with marvellous rapidity, and each year have seen, not one new language formed, but several.

Another
form of the
linguistic
argument.

The linguistic argument sometimes takes a different shape. Experience, we are told, furnishes us with a measure of the growth of language, by which the great antiquity of the human race may be well-nigh demonstrated. It took above a thousand years for the Romance languages—French, Italian, Spanish, Portuguese, Wallachian, and Roumansch, or the language of the Grisons—to be developed out of Latin. Must it not have taken ten times as long to develop Latin and its sister tongues—Greek, German, Celtic, Lithuanian, Sclavonic, Zend, Sanskrit—out of their mother speech?

¹ See Max Müller's *Lectures on the Science of Language*, First Series, p. 53.

² *Ibid.*, p. 51.

Nor was that mother speech itself the first form of language. Side by side with it, when it was a spoken tongue, must have existed at least two other forms of early speech, one the parent of the dialects called Semitic—Hebrew, Arabic, Syriac, Phœnician, Assyro-Babylonian, etc.—the other bearing the same relation to the dialects of the nomad races scattered over Central and Northern Asia—the Tungusic, Mongolic, Turkic, Samoyedic, and Finnic—which are all “radii from a common centre,”¹ and form a well-established linguistic family. But these three mighty streams, which we may watch rolling on through centuries, if not millennia, distinct and separate one from another, are not wholly unconnected. If we trace them back as far as the records of the past allow, we shall find that “before they disappear from our sight in the far distance, they clearly show a convergence towards one common source.”² Widely different, therefore, as they are both in grammar and vocabulary, they too must have had a common parent, have been developed out of a still earlier language, which stood to them in the relation that Latin bears to Italian, Spanish, and French. But in what a length of time? If the daughter languages of the Latin were only developed in the space of a thousand years, and Latin,

¹ Max Müller, *Lectures on the Science of Language*, First Series, p. 33.

² *Ibid.*

with its sister tongues, required ten or twenty times as long to be developed out of the primitive Aryan speech, how much longer a time must have been needed for the formation from one common stock of the primitive Aryan, the primitive Semitic, and the primitive Turanian types! When from reasoning of this kind—regarded as valid—the conclusion is deduced, that “twenty-one thousand years is a very probable term for the development of human language in the shortest line,”¹ we can only feel surprise at the moderation of the reasoner.

The
reasoning
invalid.

But the reasoning is invalid on several grounds. (a) The supposed induction is made from a single instance—the case of Latin and its daughter tongues. To prove the point, several cases parallel to that of Latin should have been adduced. (b) The time which it took for Latin to develop into Italian, Spanish, Wallachian, etc., assumed to be known, is not known. No one can say when Italian was first spoken. All that we know is, when it came to be a literary language. The fact seems to be that the Gauls and Spaniards, even the provincial Italians, learnt Latin imperfectly from the first, clipped it of its grammatical forms, corrupted its vocabulary, introduced phonetic changes consonant with their own habits and organs of speech. Languages nearer to Spanish and Italian than to classical Latin were probably spoken gene-

¹ Bunsen, *Egypt's Place in Universal History*, Vol. iv., p. 563.

rally in Spain and Italy, while Latin was still the language of the capital and of polite society. (c) Linguistic development is not, in fact, equal in equal times. On the contrary, there are periods when changes are slow and gradual, while there are others when they take place with extraordinary rapidity. English altered between Chaucer and Shakspeare very greatly more than it has changed between Shakspeare and the present day. Changes are greatest and most rapid before there is a literature; consequently, in the early stages of a language's life. And they are facilitated by the absence of intercourse and isolation of tribe from tribe, which is the natural condition of mankind before states have been formed and governments set up. In the infancy of man linguistic change must almost certainly have progressed at a rate very much beyond that at which it has moved within the period to which history reaches back.

Varying
rates of
progress in
linguistic
changes.

It is as impossible, therefore, to measure the age of language by the period—supposing it known—which a given change occupied, as it would be to determine the age of a tree by the rate of growth noted at a particular time in a particular branch.

The diversities of physical type have also been viewed as indicating a vast antiquity for man, more especially when taken in connection with supposed proof that the diversities were as great 4000 years ago as they are now. The main argument here is

Argument
from the
diversities
of human
physical
type.

Argument
answered.

one with which history has nothing to do. It is for physiologists, not for historians, to determine how long it would take to develop the various types of humanity from a single stock. But the other point is an historical one, and requires to be considered here. Now, it is decidedly not true to say that all, or anything like all, the existing diversities of physical type can be traced back for 4000 years, or shown to have existed at the date of B.C. 2100. The early Egyptian remains indicate, at the most, five physical types—those of the Egyptians themselves, the Cushites or Ethiopians, the Nahsi or Negroes, the Tahennu or Lybians, and the Amu or Asiatics. The Egyptians are represented as of a red-brown colour, but their women as nearly white. They have Caucasian features, except that their lips are unduly thick. The Ethiopians have features not dissimilar, but are prognathous and much darker than the Egyptians, sometimes absolutely black. The negroes are always black, with crisp, curly hair, snub noses, and out-turned lips; but they are not represented until about B.C. 1500. The Tahennu or Lybians of the North African coast have features not unlike the Egyptians themselves, but are fair-skinned, with blue eyes and lightish hair. The Amu have features like those of the Assyrians and Jews: they vary in colour, being sometimes reddish, sometimes yellow, and having hair which is sometimes light, sometimes

dark. The diversities are thus considerable, but they are far from equalling those which now exist. And it may be suspected that each type is exaggerated. As there cannot have been the difference of colour between the Egyptian men and the Egyptian women which the monuments represent, so it is to be supposed that in the other cases the artists intensified the actual differences. The Ethiopian was represented darker than he was, the Lybian lighter; the negro was given crisper and bushier hair, a snubber nose, and thicker lips. Art, in its infancy, marks differences by caricaturing them. We must not argue from caricatures, as if they had been photographs.

We are not obliged, then, to relegate the entire development of existing physical types to the prehistoric period, and on that account to give it, as has been proposed, a vast enlargement. History shows us five types only as belonging to its first period. The rest may have been developed subsequently.

Conclusion.

III.

FURTHER, there are a certain number of positive arguments which may be adduced in favour of the "juvenility" of man, or, in other words, of his not having existed upon the earth for a much longer period than that of which we have historical evidence. As, first, the population of the earth.

Positive arguments for the juvenility of man.

The
population
of the
earth.

Population
grows in
spite of
hindrances.

Considering the tendency of mankind to “increase and multiply,” so that, according to Mr. Malthus,¹ population would, excepting for artificial hindrances, double itself every twenty-five years, it is sufficiently astonishing that the human race has not, in the space of 5000 years, exceeded greatly the actual number, which is estimated commonly at a thousand millions of souls. The doubling process would produce a thousand millions from a single pair in less than eight centuries. No doubt, “hindrances” of one kind or another would early make themselves felt. The difficulty of obtaining subsistence would either defer marriage or introduce the practice of infanticide. War, famine, pestilence would, from time to time, sweep off whole nations, and would act as a continual check and drag upon the rate of increase. In civilised communities regard for social position would induce self-restraint among one class, while profligacy and vice would exhaust the physical powers, and so hinder reproduction in another. But, notwithstanding all these obstacles, population, it is plain, still grows; every year sees the earth more thickly peopled; in almost every country where a census of the inhabitants is, from time to time, carefully taken, some increase is noted. In our own country the total has risen from twenty-five to thirty-five millions within the writer’s life-time. Is it con-

¹ *Essay on Population*, Vol. I., pp. 6-8.

ceivable that, if man had occupied the earth for the "one hundred or two hundred thousand years" of some writers,¹ or even for the "twenty-one thousand" of others,² he would not by this time have multiplied far beyond the actual numbers of the present day? No one can doubt that the earth is capable of nourishing ten times its existing number of inhabitants. Give man the "vast and profound antiquity" proposed,³ and what has hindered him from reaching that point of equilibrium between his numbers and the food-producing capacity of the globe, to which, if continued in existence, he must ultimately attain?

Why has equilibrium between population and the food-producing powers of the earth not been long ago attained?

Secondly, does not the fact that there are no architectural remains dating back further than the third millennium before Christ indicate, if not prove, the (comparatively) recent origin of man? Man is as naturally a building animal as the beaver. He needs protection from sun and rain, from heat and cold, from storm and tempest. According to Scripture, the son of the first man who was born into the world "builded a city;" and the waters of the flood were scarcely subsided when the cry arose, "Let us build us a city and a tower." Brick is easily made; stone of many kinds is not difficult to hew. Can man have been long upon

Argument from absence of architectural remains before the third millennium before Christ.

¹ Morgan, *Ancient Society*, Preface, p. v.

² Bunsen, *Egypt's Place*, Vol. iv., pp. 563, 564.

³ Morgan, l. s. c.

the earth before he began to raise structures of some considerable size and solidity? Nay, can it have been *very* long before he conceived the idea of “making himself a name” (Gen. xi. 4), by erecting a building which would endure, and carry down his memory to future ages? It is true that from the moment that man produces an architectural work decay sets in. “Tempus, edax rerum;” and the earlier essays of humanity in architecture have doubtless perished. But there are countries and climates where time’s power is reduced to a minimum, and the gnawing of his tooth *almost* defied. How is it that Egypt and Babylonia do not show us pyramids and temple towers in all the various stages of decay, reaching back further and further into the night of ages, but start, as it were, with works that we can date, such as the Pyramids of Ghizeh, and the *ziggurat* of Uruk at Mugheir? Why has Greece no building more ancient than the treasury of Atreus, Italy nothing that can be dated further back than the flourishing period of Etruria (B.C. 700-500)? Surely, if the earth has been peopled for a hundred thousand, or even twenty thousand years, man should have set his mark upon it more than five thousand years ago.

Argument
from the
waste places
of the earth.

Again, if man is of the antiquity supposed, how is it that there are still so many waste places upon the earth? What vast tracts are there, both in

North and South America, which continue to this day untouched primeval forests? The Amazon and its tributary streams water a region which is as large as Russia in Europe, of this description. Others are to be found on the Colorado and the Mississippi, and also in the vast expanse which lies between Upper Canada and the Pacific Ocean. Again, what millions of acres are there in Russia in Asia, well suited for agriculture, over which there now roam only a few thousands of nomads! The entire Russian possessions in this quarter, though estimated to contain more than five millions of square miles, have a population of under four millions of souls. Must not man have thrust himself into these regions ere now in crowd upon crowd, and have settled down there in agricultural communities, were he not, comparatively, a new comer upon the earth? Like a boat's crew, cast but lately on a desert isle, he has not one-half examined, much less taken possession of, his inheritance.

Finally, we venture to ask, which is worthier of the Divine Wisdom and Benevolence, that man should have commenced his being in a civilized condition—albeit the form of the civilization was simple and incipient—and should have retained that position, gradually improving it, though here and there falling off into savagery, for some five or six thousand years, or that the subjoined view,

Argument
from Divine
wisdom and
benevolence.

Recent
speculation
on the
subject.

which is the outcome of recent speculation on the subject, should be true :—

“If we assume a hundred thousand years as the measure of man’s existence upon the earth in order to find the relative length of each period, . . . it will be seen at once that *at least sixty thousand years must be assigned to the period of savagery.* Three-fifths of the life of the most advanced portion of the human race, on this apportionment, was spent in savagery. Of the remaining years, *twenty thousand, or one-fifth, should be assigned to the Older Period of barbarism. For the Middle and Later Periods [of barbarism] there remain fifteen thousand years,* leaving five thousand, more or less, for the period of civilization. The relative length of the period of savagery is more likely under than over stated.”¹

Sixty thousand years of savagery, and thirty-five thousand years of barbarism, which is nearly the same thing—to five thousand years, “more or less,” of civilization, is scarcely satisfactory.

IV.

General
results, and
conse-
quences
involved in
them.

THE results arrived at seem to be that, while history carries back the existence of the human race for a space of 4,500 years, or to about B.C. 2600 (p. 23), a prehistoric period is needed for the production of the state of things found to be then existing, which cannot be fairly estimated at much less than a millennium (p. 28). But if a continuous space of 5,500 years be thus required for man’s passage into his present position, some alteration

will need to be made in our customary and traditional beliefs. Either the Flood must be regarded as partial, and especially as not having affected Egypt, or the ordinary chronology of the period between Noah and the Call of Abraham must receive some expansion. But the universality of the Flood can scarcely be called in question without doing violence to the entire account given in Genesis vi.—ix., as well as to certain passages of the New Testament, as especially Matt. xxiv. 37—39, and 2 Pet. ii. 5. It is moreover supported by a most widely-spread—an almost universal tradition. The supposed chronology of the period between the Flood and Abraham contains, on the contrary, various elements of uncertainty within itself, and has no support of external evidence. In the first place, it is composed of a series of numbers, no one of which is repeated or otherwise checked by the context. In the second place, among the numbers a very undue proportion are round, and therefore probably inexact. Thirdly, in the three ancient versions of the Old Testament which have come down to us—the Hebrew, the Samaritan, and the Septuagint—the numbers are widely different. According to the Hebrew Bible, the sum total of the years between the Flood and the Call of Abraham was 427; according to the Samaritan it was 1002; according to the Septuagint it was 1132. Supposing the Call to have taken place

about B.C. 2000, the Hebrew date for the Deluge would be B.C. 2427 ; the Samaritan, B.C. 3002 ; the Septuagint, B.C. 3132. Even the earliest of these dates seems, however, to be insufficient. May we not, therefore, regard it as highly probable that the numbers have suffered corruption *in all the three versions*, and that the real space between the Deluge and Abraham exceeded even the Septuagint estimate ?

Proposed
date for the
Flood,
A.C. 3600.

If the Flood is placed about B.C. 3600, there will be ample time for the production of such a state of society and such a condition of the arts as we find to have existed in Egypt a thousand years later, as well as for the changes of physical type and language which are noted by the ethnologist. The geologist may add on 2000 years more for the interval between the Deluge and the Creation, and may perhaps find room therein for his “palæolithic” and his “neolithic” periods.



MAN, PHYSIOLOGICALLY CONSIDERED.

BY

ALEXANDER MACALISTER, M.A., M.D., F.R.S.

*Fellow of St. John's College, and Professor of Anatomy in the University of
Cambridge.*



THE RELIGIOUS TRACT SOCIETY:

56, PATERNOSTER ROW; 65, ST. PAUL'S CHURCHYARD; AND
164, PICCADILLY.

Summary of the Tract.

I. Man a cosmopolite in geographical distribution, although wanting in those qualifications by virtue of which the most widely diffused animals spread themselves. He has the power of using means to extend and supplement his physical powers. Man's mental power is correlated with the development of his nervous system, although we cannot explain the mental results as due to molecular changes.

II. Man's body is a machine formed for doing work. Its framework is the most suitable that could be devised in material, structure, and arrangement. The muscles, or active organs of motion, considered in reference to their structure, adaptation, and dynamical relations. The working power of the human body. Relation of food to work. The human and the artificial machine compared.

III. The heart a muscular mechanism. Amount of work done by it ;—its complexity, its susceptibility to emotional influences. The blood ; some of its functions.

IV. Speech—produced by correlated muscular mechanisms. Voice and Speech, their respective natures and organs. Vowels and consonants. How dialects arise ; correlation and co-ordination required for speech.

V. Law of cycle in human life. Sleep. Changes which take place during its occurrence. Death.

VI. The Body a Temple of God. Its chief lesson, that of perfect adaptation. His body is a monument of design. The fitting of means to ends an evidence of the wisdom of God. Revelation teaches us that a glorious future awaits redeemed humanity.

Man, Physiologically Considered.



I.



THE dry land area of the earth's surface is estimated as exceeding fifty-two millions of square miles in extent.

Man cosmopolitan in distribution.

Although the different parts of this area present conditions the most varied, and every conceivable range of climate, from perpetual snow to permanent tropical summer; yet, excepting in a few inhospitable tracts within the Polar circles, and a few desert patches elsewhere, man has attained to a universal distribution. The parts uninhabited by man make up less than one tenth of the whole surface.

This is a phenomenon unique in the Animal Kingdom; the bounds of habitation of each animal are determined by the existence of those conditions of food and temperature under which its life is possible; and, generally speaking, the area of distribution of each species is very restricted. A few animals, like the mouse rat, and

All other animals restricted to a limited area.

dog, have been transported by man over wide areas in comparatively recent times, and are now multiplying in regions in which they were unknown before; but man is the only animal that, by his own exertions and capacities, has traversed the natural barriers which have limited the distribution of other forms.

The most widely diffused animals have certain characters, wanting in man.

Those other animals which, like the rat, have now spread over large tracts of the globe, are characterised by an early maturity, a capacity of feeding upon almost any form of food, and a rapid rate of multiplication. Man presents us with characters in all respects the most diverse from these:—he has the longest period of helpless infancy of any animal, and is slow in attaining maturity (one fourth of his life, at least twenty years, having passed before his full growth is perfected); he is also able to use only a limited number of substances in their natural conditions as food. Mankind also multiplies at a slow rate, thus, while within the past fifty years, forty-five persons have descended from a single pair of royal parents in Britain; in the same period of time one pair of rats would, at their ordinary rate of increase, have had a progeny at least as great, numerically, as the whole population of England. Yet, in the face of all these disabilities, man has, by his own exertions, become a cosmopolite.

Those animals which, zoologically, are the most

nearly allied to man in structure have exceedingly narrow areas of distribution. The gorilla is confined to a small tract of West Africa about the size of France. The Chimpanzee, although ranging over a larger district of Equatorial Africa, yet does not extend beyond the region limited by the parallels of 12° N. and S. latitudes, and in this belt is only found between the sea-coast on the west and the meridian of Lake Tanganyika on the east. The Orang Utan is limited to the Islands of Sumatra and Borneo. It seems strange that man should have such a universal diffusion, while these are so restricted and so strictly Equatorial.

Man's nearest allies in structure limited in distribution.

Did we only know concerning man as we know of these anthropoid apes, from preserved museum specimens, we could hardly fail to consider him as eminently unfit for a wide distribution, or for maintaining his position in the struggle for life. Bare in surface, while his neighbours are hair-clad, feeble in teeth, while his nearest allies are strong, with thin flat nails in place of claws, and short, weak hands and arms, incapable of grasping with his feet, imperfect as a climber, less fleet of foot than his foes, nature has neither furnished him with weapons for war, nor with implements wherewith to search efficiently for food; yet this bare, weaponless animal has spread over the whole world, has assumed and maintained dominion over

Man apparently unfit for a wide distribution.

the other creatures, has waged successful warfare against animals fiercer, and against forces stronger than himself, and has exterminated many of the foes which were the most hostile to him.

Man's
capability of
living in all
countries
due to his
power of
using means.

The secret of this capacity for adaptation and dominance lies in Man's power of employing means. By the use of clothing he is able to fit himself to live in any climate; by cooking, to use all varieties of food; by the invention of weapons, to engage in all warfare; and by the perfecting of speech he obtains the power of perfect co-operation with his fellows. The most intelligent animal, untaught by man, can do no more than turn to some obvious use the tree-branch or stone which first comes to hand; but the rudest races of savage man, in the most inhospitable districts, have sought out materials wherewith to make clothing, if they need it; have invented weapons; have brought under subjection the powers of nature, using fire to prepare their food, and the winds to waft them across the waters; and the members of every tribe have framed their own articulate speech for the mutual interchange of thought.

The cor-
relation of
bodily to
mental or-
ganization.

While it is thus power of mind, not power of body, which gives to man his supremacy, yet, in all respects, man's bodily organization is fitted to enable him to use to the best advantage his mental endowments. If he conceive in his mind the plan of making a weapon, his prehensile hand

with its sensitive skin and its independently moving and opposable thumb can fabricate it. His sinuous backbone and completely extensile lower limbs enable him to stand upright with perfect stability, with an ease and perfection competent to no other animal; and thus his forelimbs, relieved from all necessity to act as organs of progression, are perfectly disengaged for work and warfare.

The material instrument whereby the mind operates in man, and through which it rules over his whole body, is the nervous system, the central parts of which form that continuous series of organs which are called the brain and spinal marrow. The former of these, the brain, fills the entire cavity of the skull, and is proportionally larger in Man than in any other animal; while the brain of the Gorilla, the highest of the apes, averages 24 ounces in weight, or a little less than $\frac{1}{120}$ of the entire weight of his body, that of man averages 46 oz. or a little more than $\frac{1}{53}$ of his total weight. In minute structure this organ consists of aggregations of very minute branched particles of a peculiar and very decomposable material, which are called nerve-cells, and which vary from $\frac{1}{400}$ to $\frac{1}{3800}$ of an inch in diameter. From each of these minute pyramidal, spindle-shaped, or irregular nerve-cells, there pass two or more very fine tails or filaments, some of which

The brain,
the instrument of the
mind.

Its minute
structure.

go to communicate with neighbouring cells, while others, of great length, pass through and out of the brain, and are distributed throughout the body; so widely, indeed, do these filaments wander, and so universally are they dispersed, that one cannot touch any area of skin with the point of a needle without pressing on the termination of a nerve fibre. These fibres of distribution, as we may call the long, tail-like threads from the nerve cells are each enclosed in a delicate sheath, and vary from $\frac{1}{500}$ to $\frac{1}{12000}$ of an inch in diameter. These leave the brain in bundles which are called nerves, and are distributed through the body so generally that there is not a structure in the body which is not connected with some single cell or group of nerve-cells in the brain. We may look upon the brain, therefore, with its five million constituent nerve-cells as the great unifying organ among the constituents of the body.

A great part
of the brain
connected
with move-
ment.

Much of the substance of the brain is directly concerned with the superintendence of the machinery of the bodily movements; when we discount this element, which constitutes nearly one half of the human and about three-fourths of the ape's brain, the disproportion between the remainder of the human and of the animal brain appears much greater. Another large contingent of the brain substance is required for the physical processes connected with the reception of impressions from

without. We live in a world of vibrations, our surface is constantly coming in contact with the surrounding material bodies either at rest or in motion; while the waves of sound, and those even more problematical vibrations which we call light-waves, are constantly being brought to bear upon us from without. The conditions under which we live render it necessary for our well-being to take cognizance of these vibrations, as by them we learn of our surroundings, and are taught to avoid danger and to procure food.

A great part of the brain connected with the recognition of sensations.

We have seen that every spot on our surface is connected by fine nerve threads with the nervous centres, and that these threads are themselves fine processes of the minute nerve cells, and of the same impressionable material. These threads are not like simple telegraph wires, carrying impulses to a registering machine, they are outgrowths of the registering machine itself, each capable of receiving and feeling an impulse from without at its termination: hence sensation, that is, the affecting of these extremities by external stimulus is registered at the spot where the impression is made. There are two distinct though associated processes connected with sensation, the reception and registration of the impulse, and our consciousness of it: the former occurs in the part itself, the latter in the brain. I am conscious of an impression by virtue of the connection between the local nerve

The extension of each nervous element.

and the groups of brain cells connected therewith; but I feel the contact at my finger-tip, not at my brain. If I cut the connection between the local nerve and the brain, the consciousness of contact is lost, although the local effects are the same as before. If the nerve coming from the surface of a limb communicate through nerve cells in the spinal marrow with a nerve going to a muscle, and if the brain communication be cut by accident or disease, then irritation of the surface will cause the muscle to move, but without any consciousness. The element of purpose which is discernible in this instance, pervades the action of the entire nervous system in all animals; here the muscle, by contracting, draws the irritated limb away from the irritant without the operation of a conscious will. If, in a recently killed and decapitated frog, a drop of acid be allowed to fall upon the skin, the leg moves and endeavours to wipe it off; but the purpose in such case is unintelligent, not being under the dominion of consciousness, thus if a snake, killed by beheading, be hung up and touched in several places with a stick, it will coil round it; but if for a stick a hot poker be substituted, it will coil round it with equal readiness.

Purpose
discernible
in nerve
actions.

Dispropor-
tion between
magnitude
of stimulus
and effect
produced.

In many of these actions of the nervous system we notice a singular disproportion between the magnitude of the stimulus and the effect produced. The contact of a fine hair or of a crumb with the

mucous surface of the glottis, or throat-opening of the windpipe, will cause a violent spasmodic fit of coughing, which convulses the whole body; while even a more powerful stimulus to other parts of the mouth, the tongue, or throat, organs in other respects equally sensitive, produces no other effect than a flow of saliva or an impulse to swallow. These again are simple illustrations of the element of purpose in nervous actions, as it is of vital importance to the organism that the glottis be kept clear of all solid matter.

We can learn much of the local change which occurs in nerve-tissue when exposed to contact or stimulation: it is an impulse propagated in the material of the filament from the peripheral termination to the nerve cell, at a definite rate, a little over 100 feet in the second, and associated therewith are certain recognizable physical molecular changes. But of the real nature of the processes whereby this impulse is translated into consciousness, even in its lowest form, we know almost nothing, and still less do we know of the physical processes which underlie or accompany those mental operations, which originate in and work by the agency of the brain, such as thought, emotion, volition. That certain physical changes take place in the cells of the nerve-centres in connection with these processes is evidenced in many ways: energy is dissipated as heat, the blood vessels of the head

The nature of the changes in nerve-tissue during action.

Evidence of physical change in the cells of the nervous centres.

Molecular
changes
cannot ac-
count for
the mental
results.

and neck show increased pulsation and fulness, the quantity of blood in the other parts of the body is proportionately diminished during brain work, and in direct ratio of the difficulty of the work, and the blood returning from an acting brain is richer in carbonic acid and other products of waste, thereby indicating the consumption of tissue in the work; but the amount of these actual changes is far too slight, and the actual energy which can be shown to be set free is too small to be adequately measured in terms of other forces, although the consequences dependent on the mental exertion may be of tremendous moment. The physical change in the cell may vary in degree, but we have no evidence whatever that it varies in kind; though the mental state may be intellectual labour, emotion, will, or the merest supervision of bodily menial work, we can in all cases only obtain evidence of the combustion and oxidation of the nerve matter, associated with the dissipation of energy as heat and electric force. When intellectual operations are looked at from the physiological side, the difficulties of regarding them as solely the outcome of physical changes in nerve cells are insurmountable. To refer the *Principia* of Newton, the *Iliad* of Homer, or the *Essays* of Bacon to vibrations due to chemical change in a few ounces of nerve cells seems a *reductio ad absurdum* indeed.

But while the physical factors in mental pro-

cesses seem thus utterly inadequate to account for the nature and magnitude of the results, yet they have certain definite relations thereto. The rate of mental action has been carefully studied and ascertained, more especially in its bearing upon the making of exact observations in astronomy, so that the phrase "quick as thought" has a definite meaning, capable of translation into units of time. The amount of tissue-change in the brain during action, although not determined, has been roughly approximated, and will probably before long be more definitely measured, and the amount of energy set free in the course of the physical changes which accompany mental processes may yet be capable of expression in foot-pound equivalents.

Molecular
and mental
forces co-
operate

Man alone has the singular pre-eminence of being the animal in which the mental part rules or can rule the material: he alone can turn his mind in upon itself for self-study, he alone has the power of making the reception and recognition of impressions from without subservient to his pleasure in a manner quite unknown to other animals. They can recognize the vibrations of sound-waves, and learn therefrom the presence of other animals, or of noise-producing forces. Man perceives these sounds, classifies them, discerns certain relationships, and makes such combinations of them as minister to his pleasure, and thus invents and improves the art of music, and the instruments by

The mental
rules the
material
in man.

which these pleasing combinations of sound are produced. The lowest races of man have their drums, reeds, and pipes for this purpose, and at a very early stage in the history of humanity we read of Jubal "the father of all such as handle the harp and pipe."¹

Animals can in like manner recognize sensations of form and colour, and thereby learn something of their surroundings. Man, appreciating these in a higher degree, can reproduce them not only mentally in his memory, but pictorially, by the aid of his hands directed by brain and eye; and so can render permanent those combinations of light, shade, and colouring which gave him pleasure; and he can gratify his taste by art, in places and at times when nature fails to minister pleasant scenes to the eye. And man has done so from an early if not from the earliest times of his existence. The rude savage who hunted the wild ox, mammoth, and reindeer in prehistoric times on the plains of France, has left behind him, scored upon bones, horns, and tusks, life-like graphic outlines of his wild-beast contemporaries.

Even the earliest men of whom we have traces had the same kind of mental power of Art which we now possess.

¹ Genesis iv. 21.

II.

AMONG the different aspects in which we may regard the living human body, one of the most suggestive and instructive, although perhaps, from its very attractiveness, one of the most commonplace, is in its character as a machine constructed for doing work. In man himself, as in those mechanisms which he constructs by his art, there is no creation of energy ; but as in these, the human apparatus transforms into heat and motion the energy of chemical combination which it finds in the materials taken in as food.

The human body viewed as a machine for doing work.

The details of the mechanism of man are so complex that it requires a life-long study to obtain a thorough knowledge of his organization ; and the more carefully it is examined, the more forcibly do we recognize how completely every part, even the most minute, bears the stamp of perfect fitness for its place and use. We might illustrate this from any subdivision of the parts of the body, but will only refer to two systems, the bones and the muscles.

The adaptation of the skeleton to fulfil its function as the firm basis of the body is shewn, firstly, in the suitability of the material of which it is constructed, bone ; secondly, in the appropriateness of the disposition of this material both in its minute and its larger organization. There is not one

Suitability of the framework of the machine.

of the two hundred bones which make up the skeleton whose particles are not so perfectly adjusted as in the most efficient manner to sustain the pressure and bear the strain to which it is exposed.

Conditions
which a per-
fect skeleton
should fulfil.

In order to build a skeleton of the most suitable kind, the conditions which require to be fulfilled are, first, the component material must be of adequate hardness, toughness, and elasticity; second, it must present an adequate extent of surface to allow of the attachment to it of muscles; and third, it must have as little weight as possible. All these conditions are fulfilled by bone.

Suitability
of bone for
the purposes
of the
skeleton.

In the first of these respects, bone is of all available substances the most suitable. Its power of bearing weight without being crushed is greater than that of any other organized tissue, or even than that of many metals. This can be seen from the following table, in which the numbers represent the number of kilogrammes which are required to crush a rod of the substance measuring one square millimetre in area of section.

Table
showing
relative
capacities of
resisting
crushing.

Steel	... 145	Lead	... 5
Wrought Iron	22	Granite	... 5·9
Cast Iron	... 73	Bone	... 15
Oak	...	...	4·8

The elasticity of bone is also one of its most characteristic qualities, as can be seen from the

following table which gives the values of the modulus of elasticity of different substances.¹

Steel	...	...	...	21,000.
Wrought Iron			...	19,000.
Bone	...	...	...	2,400.
Lead	...	...	...	1,800.
Oak, if parallel to the grain			...	1,100.
Oak, across the grain			...	130.

Table showing the relative elasticities of various bodies.

Lastly, the tensile strain which bone can bear without giving way is also very great; from numerous experiments the following tearing limits have been determined for different substances, the numbers, as before, representing the number of kilogrammes required to tear a rod of the size mentioned above:—

Steel	...	102	Bone	...	12
Wrought Iron		41	Zinc	...	5
Cast Iron	...	13	Oak	...	6½

Table showing power of resisting tearing of various bodies.

A cube of bone one square inch in surface will bear, without being crushed, a weight of more than four tons; and the weight of the whole human

¹The method whereby these values are ascertained will be found in any work on elementary Physics. As the co-efficient of elasticity, that is, the proportional amount by which a rod of any substance one square millimetre in cross section is lengthened by the load of one kilogramme, is a very small fraction, the relative elasticities can be more graphically represented by the reciprocal of this fraction, *i.e.*, unity divided by the proportion of elongation, which represents the theoretic weight in kilogrammes which would be required to lengthen a bar to twice its original length, if it were perfectly elastic. This is called the modulus of elasticity.

Lightness
and strength
of human
skeleton.

skeleton is distinctly less than the weight of a similar framework of wrought iron of equal strength. There are few better illustrations of the hardness and strength of the human skeleton than the comparative rarity of broken bones, considering the amount of violence to which the human frame is from time to time subjected.¹

Extent of
bony surface
provided for
attachment
of muscles.

In the second place, the ordinary male human skeleton exposes a surface a little over one thousand square inches in extent, available for muscular attachments; more than double the area which a wrought iron skeleton of the same height and weight, and constructed in proportion so as to be of the greatest possible strength, would present.

Weight of
human
bones.

The weight of the average male skeleton when fresh and moist is about twenty pounds, when dry and prepared, about ten pounds, and the material of which it is made up is in specific gravity one quarter that of wrought iron.² Not only is the substance thus comparatively light in itself, but it is disposed so as to offer the maximum of resistance with the use of the minimum of material.

Those bones which are constructed to support

¹ A comparison of these tables shows that bone is equally strong to resist crushing and tearing, in the former respect being little inferior to wrought iron, in the latter to cast iron.

² The following table of the specific gravities of the substances above contrasted will be of interest :

Wrought Iron...	7,788	Marble...	..	2,837
Cast Iron ...	7,207	Bone ...	...	1,870
Lead ...	.. 11,352	Oak ...	...	0,845

weight are built as hollow columns; and in these the proportion of the thickness of the solid wall to the whole diameter is the best possible for strength and lightness.¹ These hollow cylinders are still further strengthened by pilaster-like ridges along the lines of greatest pressure, and by struts under the piers of arches. Where the ends of bones come in contact with each other so as to form moveable joints, they are expanded so as to afford large and often interlocking surfaces, combining thus stability with the capability of motion. The shaft of the bone alters in structure as it thus expands;

Architecture of bones, hollow columns.

Cancellated or spongy tissue in ends of long bones.

¹ It has been found by experiment that if the *same amount of material* be used to construct two columns, one solid and the other hollow, that the following numbers will represent their respective powers of bearing vertical weight on the end, and a transverse breaking strain:—

		Crushing Limit.	Snapping Limit.
1. Solid column, diameter	100	1,000	10
2. Hollow column, diameter	125	2,125	17

(Thickness of ring in No. 2=50, therefore solid diameter equal to that of No. 1).

If now we take three columns *of the same diameter*, but constructed of varying amounts of material, and compare these in the same respects:—

			Crushing Limit.	Snapping Limit.
1. Diameter, 100, solid column	...	...	1,000	8
2. Diameter, 100, hollow column, with inner diameter 60...	...	...	870	7
3. Diameter, 100, hollow column, with inner diameter of 80	...	...	590	4·8

This table shows us that, although No. 2 has only three-fifths the amount of bone of No. 1, yet it is seven-eighths as strong; and No. 3 has only one-third the substance and more than one-half the strength of No. 1.

Architecture
of spongy
bony tissue.

and instead of continuing hollow to its articular or joint-forming end, which would diminish its strength, the hitherto compact bone becomes split up into a large series of closely applied thin plates of bone, which are so disposed that they bear upon their ends the direct pressure of the body. These lamellæ are tied together by numerous intersecting plates placed at right angles to them, and these secondary lamellæ serve as ties to prevent the separation of the primary system. By this arrangement the articular end of the bone becomes expanded and formed of cancellous or spongy bony tissue, the structure of which at first sight seems so confused and irregular, but displays on closer examination an elaborate plan in the disposition of its every plate. As the conditions under which each bone is placed vary, so the plan of the lamellæ varies; but the general principle holds good all through, that the layers are placed to resist respectively pressure and tension. The arrangement is consequently so characteristic in every bone, that an anatomist of experience can at once recognize from what bone and in what plane any given section is taken.

Arrangement of
cancelli in
each bone
peculiar to
suit its
special conditions.

The same
fitness in
the
dynamics
of the
skeleton.

If, from the statics, we turn to the dynamics of the skeleton, the same fitness is observed: the adaptations of the long bones as levers for so many purposes; the mechanism whereby the sinuously curved spine can be kept erect in

different positions; the arrangements whereby bipedal progression can take place, and by which standing on two feet can be accomplished with perfect maintenance of stability; the mechanism whereby without the constant action of the straightening muscles of the knee, but simply by the influence of the superincumbent weight causing certain bony surfaces to glide on each other, a perfect ligamentous interlocking occurs in the knee joints, enabling the thighs to continue vertical in standing, without the fatigue of continued muscular work, all these and many more examples could be adduced as interesting studies in the teleology of the skeleton.

But the bones constitute only the passive organs of motion, the muscular system is the real seat of the working power of the body; to it the bones are subordinated, and in this system we are still more strikingly presented with evidences of design.

The muscles
the active
organs of
bodily work.

There are about two hundred and sixty pairs of muscles attached to the bones in man, and serving the purpose of moving these as levers in the different ways required for the purposes of life. These constitute upwards of sixty pounds of the weight of the body; but as this includes the weight of the sinews and non-contractile fibrous expansions which ensheath the muscles, not more than forty-eight pounds of this represents truly contractile material.

Number of
muscles and
amount of
muscular
tissue in
man.

The con-
tractile
substance
of muscle.

The substance of which these muscles consist is probably the most remarkable material in the body, and it is worthy of note that although it is a substance easily obtained and presenting no apparent difficulty in preparation and examination; and although anatomists have brought to bear upon it all the improved instruments of modern science, and have used these with all the skill of years of practical experience, yet we have not succeeded in learning the details of its structure. Minute examination has only revealed that the elements which were once regarded as ultimate are compound, and organized with a minuteness which has as yet baffled the highest powers of the microscope to unravel.

Properties
of muscular
substance.

The most remarkable property of muscle is its contractility. The particles of which it is composed can, upon being bidden, change their place, so as to alter the shape of the whole mass, shortening and thickening it. Most of the muscles of the body are attached to bones at their two extremities; and when this change in shape takes place, the two bony attachments are forcibly approximated. Of these, one attachment is to a fixed bone, the other to one that is moveable; and consequently the force of the contraction is expended in drawing the latter, or insertion of the muscle towards the origin or attachment to the fixed bone. Thus the principal muscle which operates in bending the

elbow joint, and which occupies the front of the arm from the shoulder to the elbow, arises by two strong sinewy cords from the shoulder-blade bone ; hence it is called *biceps*, *i.e.*, two-headed, and it is inserted into the outer of the two bones of the fore-arm.

The study of the statics of the muscular system is teeming with interest. There is not an individual muscle which does not show the most perfect adaptation possible for the work it has to do : in its attachments, its proportional size, in the spot wherein it is entered by the blood-vessels which nourish it, and by the nerve which connects it with the brain, or centre of volition.

Every muscle adapted for the work it is required to do.

The force with which a muscle contracts is very great, and has been determined by experiment to be proportional to the area of the cross section of the muscle. The contraction of a muscle whose sectional area is one square inch can support a weight of a little over 100 lbs. The distance through which the muscle, in contraction, draws its insertion is proportional to the length of the muscular fibre-bundles ; thus, in the case of the *biceps*, the muscle which bends the elbow, already referred to, in an arm of average size, its area of section is one and three quarter square inches, and its bundles of fibres are six to eight inches in length. It has, therefore, contractile material sufficient to raise a weight of 175 lbs, through a space of four inches. As in the ordinary economy

Force of muscular contraction.

Some muscles arranged so as to increase speed at the expense of power.

of the body the lifting of such a large weight is not required, the insertion is so disposed on the fore-arm bones as to make these work as a lever of the third order, so that the weight-bearing extremity, or hand, moves through a space six times as great as that through which the insertion absolutely moves.

As the area of cross section of all the muscles of an average human body amounts to over 200 square inches, there is thus in the whole muscular system of the human body a potential energy equal to the amount which would be expended in raising at a single effort a weight of nine tons to the height of one foot. All this force can be set in motion by the human will.

Working power of the body.

From observations which have been made on railway navvies, stevedores, and other men engaged in hard manual labour, it has been ascertained that the amount of muscular work which an average labouring man performs in the day is accomplished at the expenditure of a force equal to that which would be required to raise 350 tons to the height of one foot; that is, allowing ten hours in the working day, the rate of work equals the raising of thirty-five foot-tons per hour. It is, however, possible for an able-bodied labourer to work continuously at a greater rate than this. The highest registered rate of work of piledrivers is equal to the raising of 450 foot-tons *per diem*. By working in spurts a much higher rate of work may be

attained for a short time. Each man of the crew of an eight-oared boat works, in a boat-race, at a rate equal to that required for raising a little over four foot-tons per minute, expending thus nearly eight times more energy in the time than is done at the rate of work of the ordinary day labourer.

Man's body does not create energy; but as, in a steam engine, the working force is derived from the potential energy of the fuel employed, so in the human body the force of the muscular system is derived from the substances taken in as food. In man, as in the heat-engine, the working force is set free by the occurrence of a process of combustion; and in the body of a healthy man there is consumed daily about half-a-pound of carbon, the equivalent of ten ounces of coal. By the process of combustion, that is, the union of this carbon with the oxygen of the air taken into the lungs in the process of breathing, there is produced an equivalent amount of carbonic acid, which is got rid of by being carried in the venous blood to the lungs and there breathed out. This substance (carbonic acid) is poisonous, and even when a very small percentage of it occurs in the air it produces injurious effects. One man hourly vitiates to the extent of 0.2 per cent. 350 cubic feet of air, and even this small amount of the gaseous products of breathing is unwholesome. Hence the necessity for perfect ventilation, especially in work-rooms,

Energy from
the trans-
formation of
other forces.

Waste
products of
combustion
set free by
respiration.

where persons are assembled for any form of exertion ; and as with increased work there is a commensurately increased exhalation of this deleterious gas, the need of ventilation will increase with the severity of the work.

Relation of food and work.

As carbon is the element of human food whose oxidation sets free energy most conveniently, it becomes important in arranging dietaries for labouring men, that carbon-supplying foods should bulk largely therein. Extensive observations on large masses of labouring men have shown that a healthy adult requires daily about the following quantities of food :—

Diet scale for healthy adult.

Of nitrogenous substances, such as					
meat	...	...	...	...	6 oz.
Of fats (butter, etc.)	...	...	...	...	3 „
Of carbo-hydrates (sugar, starch, etc.)	...	...	...	...	18 „
Of saline matter, chiefly common salt	...	...	...	...	1 „
Of water	...	...	...	...	80 „
Total...					108 oz.

Collateral conditions to be taken into account in choosing food.

In choosing the substances of these different classes as foods, their relative facility of undergoing digestion, preparatory to oxidation, must be taken into account, as well as the absolute amount of oxidizable material. This is true of the heat engine as of the man. Carbon, in the form of diamond or of blacklead (graphite), would form

extremely bad fuel for a steam-engine, as these are not easily burned ; and similarly, in the food supply of man, we must take into account the facility with which these substances are soluble, and admissible by digestion into the blood, for the purpose of transmission through the body for the nutrition of the tissues, and of undergoing, in the proper place, the oxidation which converts the potential energy of chemical combination into heat and muscular force. The molecules of the contractile stuff in muscle become broken up at each contraction, with the production not only of water and carbonic acid, but also of other substances in smaller quantities. If the blood stream going to and coming from a muscle be cut off, after a very short period of activity, the muscle uses up all its contractile stuff, and becomes unable to continue its contraction, while it becomes loaded with the effete products of the chemical changes. Hence it is necessary for the well-being of the muscle and for its continuance in activity that new material be brought to it to reconstruct its molecules of contractile material ; and so into the blood there must be poured continually from the digestive organs a new supply of material available for reconstituting these contractile molecules.

Chemical decomposition takes place in muscle when in action.

Need for constant blood supply to muscle to reconstruct its contractile substance.

A diet of the description given above contains potential energy equal to 3300 foot-tons in a day, of which we have seen that about one-seventh

Amount of
energy
expended in
internal
work, heat,
etc.

Contrast of
man and the
best heat-
engine.

part is the amount available for useful external work; the rest is expended in maintaining heat, the action of the heart, secretion, nervous action, and other departments of internal work. For the purposes of the life of the body, in order that the necessary processes may take place in the protoplasm of its component cells, it is necessary that the temperature should be maintained between 96° and 100° F.; so we find that the normal heat of the human body is maintained at some point from 97° to 99° , being highest during the most active period of work, shortly after breakfast-time, and lowest when tissue-change is lowest at the small hours of the morning, from 1 to 3 a.m.¹ We are not, therefore, to look upon the six-sevenths of the energy as lost, because it does not show as muscular work. But, comparing the living engine with the artificial heat machine, the advantage is distinctly on the side of the former, for in the most perfect of the latter in actual use there is barely one-ninth of the energy supplied by the fuel utilizable for external work.²

¹ The amount of energy expended in the maintenance of the constant temperature of the human body is equal to the amount required to raise $48\frac{1}{2}$ pounds of water from the freezing to the boiling point. If this energy were converted into motion, it would suffice to raise a man of ten stones weight to the height of nine miles in a day.

² By the most perfect construction of gas-engine, Crossley has been able to utilise $\frac{1}{5}$ of the energy of the fuel supplied, and Perkins has by special arrangement got nearly the same amount of work with a steam engine, but the best engines in use give only $\frac{1}{9}$ th.

III.

THE heart is perhaps the most wonderful of the special mechanisms of the human body. Its ceaseless activity, its sensitiveness in sympathising with the emotions of the mind, and the intricacy of its mechanism, have from the earliest times attracted notice, and caused it to be regarded as the very centre of life itself. To the older physicians of the classic age, who only regarded the brain as a cold mass placed in the head to temper the undue fervency of the heart, all thought, all emotion, all feelings were supposed to have their seat in the heart; and we in our colloquial language have adopted those Orientalisms of expression regarding the heart which have been familiarised and endeared to us by their Biblical use.

The heart a muscular mechanism.

Older views of the nature of the heart.

The modern physiologist has largely robbed the heart of much of the mystery, and much of the psychic association with mind and desire, with which the fancy of our forefathers had clothed it, and has transferred it from its position as seat of the affections, to the no less interesting place of physical centre of the circulation of the blood; but as the regular uninterrupted flow of blood is absolutely essential to the continuance of vitality, it is therefore physically true that out of the heart are "the issues of life."

The physical centre of the circulation of the blood.

Description
of the
heart:
Its four
chambers.

The human heart is a muscular organ, about ten ounces in weight, which, in order that its regular changes of expansion and contraction may take place with the least possible friction, is enclosed in a smooth bag, the pericardium, whose surface is rendered still more smooth by being moistened with a small quantity of watery fluid. The organ is hollow, and consists of four distinct cavities, one for receiving the impure or venous blood returning from all parts of the body, a second for taking the blood thus collected, and forcibly propelling it into the lungs. These two cavities are on the right side of the heart, and are called respectively the right auricle and the right ventricle. Into the third cavity or left auricle the blood, which has been purified in the lungs, is returned and collected; and from hence it passes into the fourth and last cavity, the left ventricle, which performs the great work of driving the wave of pure blood through the body for its nourishment.

Work done
by the
heart.

The wonderful energy of the muscular material of which the walls of these cavities is made up is the first and most prominent characteristic which we notice. The left ventricle by its contraction sends at every beat a wave of blood into the arterial system. At least five ounces of blood is expelled at each stroke, with a force capable of raising the jet to a height of about ten feet. As this is performed about seventy-five times in the

minute, the daily work of this part of the heart is easily calculated, and in an average male heart amounts to the lifting of a little over one hundred and eighty foot-tons in the day. If we add to this the work done by the other cavities of the heart, we find that the whole amount of cardiac labour in the day reaches the amazing total of two hundred and forty foot-tons, or two-thirds the ordinary labouring force of the whole voluntary muscular system.

Average
day's work
of the heart.

We can probably realize in the most graphic manner the amount of work expressed by this figure, if we remember that the muscular work done by a man of one hundred and fifty pounds weight, in ascending Snowdon, comes to about the same total. From many experiments in Alpine ascents, we find that when there are no special difficulties in the way an active man can climb ten thousand feet in ten hours; that is, can raise his own weight one thousand feet per hour; but if the amount of work which the heart performs were expended by it in the task of raising its own weight, it would lift itself to the top of the highest peak of the Himalayas in one hour and a quarter. One of the most rapid ascents known to me was one in which a man of one hundred and forty pounds weight ascended to a height of two thousand five hundred feet in the space of thirty-nine minutes; but within that time the heart has done

Comparison
of the work
done by the
heart with
other forms
of muscular
work.

work equal to the lifting of itself a thousand feet above the top of Mont Blanc.

Ceaseless-
ness of
heart's
action
during life.

A second and equally marvellous aspect of the work of the heart is its ceaselessness. Day and night, whether the body sleeps or wakes, year by year it is ever acting. While voluntary muscular work must intermit for periods of rest greater than the periods of work, the heart's rest-periods are, if anything, shorter than its work periods; and as the vessels which nourish the wall of the heart arise from the great artery immediately above the heart, so it is directly pumping blood for its own nutrition at each stroke, and nourishing itself the better when acting the more strongly.

The heart
a com-
plicated
machine.

The complexity of the action of the heart is another feature worthy of note: while to the hand the stroke of the heart gives the impression of a single beat, and while even to the ear the sound of the heart's beat seems as a double sound, yet, as we have seen, during each single pulsation there is a dilatation and a subsequent contraction of each of the four separate cavities. As the blood on each side passes from the receptive cavity or auricle into the propelling cavity or ventricle, its return is prevented by the closure of a system of valves which are self-acting. Again when each ventricle has contracted and expelled its contained blood into the large arteries, the return of the fluid is prevented by another series of valves. At each action

The action
of the valves
of the heart.

of the heart, therefore, four sets of valves, consisting of eleven separate curtains, or membranous folds, are brought into play. It was the study of these valves that, in the first instance, led to the discovery of the course of the circulation of the blood.

The ancient view, which attributed to the heart the origin and control of emotion and thought, was based on the observation that the heart is keenly susceptible to the influence of mental conditions, and is, of all organs, that by the alterations in whose action the emotions are most distinctly shown. Many forms of sensations and mental states, especially those which are pleasurable, or those of fear, accelerate its action ; feelings of self-consciousness and shame also excite it ; sudden shock or sorrow render the action slower and less efficient, or may even temporarily arrest it, causing syncope or fainting. With these emotional states the whole circulation sympathizes. By the action upon the blood-vessels through certain nerves in the neck, mental emotions of self-consciousness or shame cause the muscular walls of the superficial blood vessels of the face and neck to relax, and the face and neck become suffused, producing the phenomenon of blushing. Conversely, with the diminished heart's action of terror, shock or sorrow, unnatural pallor may be produced by the opposite condition of vascular contraction. This close connection of the action of the heart with emotion

Susceptible
of influence
of emotions.

Mechanism
of blushing.

Heart in
cold-blooded
animals acts
after death
or removal.

through the central nervous system, is characteristic especially of man and the higher warm-blooded animals. It is among these alone that stoppage of the heart and cessation of life are simultaneous ; for among the lower forms of cold-blooded animals the heart may continue to beat long after the animal is dead. If in a frog or a tortoise which has been killed by beheading, the heart be taken out from the body, it continues to beat even when placed on a plate ; and if cut up into pieces some of the portions continue to act for a considerable time after separation.

Heart not
under the
influence
of the will.

The heart is not under the influence of the will, and cannot be stopped by any voluntary natural act. By modifying the breathing and by position we may indirectly affect it, as in the celebrated case of Colonel Townshend,¹ but it is beyond the control of simple volition. So perfect, however, is the involuntary mechanism which regulates the heart and circulation, that they are continually being modified. From moment to moment, changes are occurring in the different organs, so that the quantity of blood required by each needs a continual adjustment. When food is introduced into

¹ Dr. Cheyne, in 1734, describes certain observations made by him upon a certain Colonel Townshend, who professed to have the power of stopping his heart at will ; but the case is one of great obscurity and uncertainty, and the evidence that he really possessed the ability so to do is very imperfect and inconclusive.

the stomach the organ immediately requires, and immediately obtains an increased flow of blood: so the brain, so the muscles when they are in action, demand and receive increased nutrition. A practical deduction from this is plain, that as little exertion as possible should be made during the taking place of the earlier stages of digestion, when an increased flow of blood is required by the organs which secrete the fluids used to dissolve the nutritious parts of the food.

The blood itself deserves a special notice. The blood.
An everflowing stream is a necessary condition for the maintenance of the life of the brain, and through it of the body,—so in this respect “the blood is the life.” The human body contains about Its quantity and constituents. twelve pounds weight of this fluid, which owes its red colour to the myriads of little bodies, called red corpuscles, which float in it. The blood corpuscles, These are in such enormous numbers, that they make up about five pounds of the weight of the blood. Each one is flattened like a coin, only biconcave, not plane on its surfaces. Their size is exceedingly minute, for if piled up on each other in a column, like so many pennies, it would take twelve thousand to make a pile one inch in height; and if spread out flat on a plate of glass, closely edge to edge, it would take ten millions of them to pave a square inch of the glass with one layer of them; and yet so many of them are there in the blood of an adult man, that if all

the corpuscles of the blood were thus spread out, they would pave an area of 3000 square yards.

Respiratory
function of
the red
blood-
corpuscles.

These minute bodies have a remarkable function. We have seen that during every vital action in the body, a process of combustion or oxidation takes place in the tissues. The air taken into the lungs in the process of breathing contains oxygen, and these little blood-discs absorb this gas, and in them it combines with one of their constituents. They carry this gas to the tissues, part with it where it is wanted, and thus are the agents whereby the real work of respiration is carried on; the products of combustion being returned to the lungs, dissolved in the fluid parts of the blood.

IV.

Speech a
human
attribute.

THE apparatus of speech is one of the most characteristic parts of the human organization; for although the organs which are used for this purpose are common to man and the lower animals, yet in him they have attained to a degree of specialization far beyond that found in any other animal; to none of whom is real articulate speech physically possible, except in the form of the feeble parody artificially induced in speaking birds, such as parrots and ravens.

In making intelligible communications with his

fellows, man makes use of noises of two kinds, voice sounds and speech sounds. The first series of these, or voice sounds, are produced in the gristly box, called the *larynx*, which can be felt in the throat below the chin, and to which the familiar name “Adam’s apple” is given, from its greater prominence in males than in females. Through this box the air passes, in breathing, from the mouth into the windpipe, on its way to the lungs and back again; and in the middle of this organ, its cavity is narrowed to a long chink or fissure, bounded on each side by a thin, sharp-edged, elastic, membranous fold, projecting inwards as a shelf from the inner wall of the larynx. To these folds the name *vocal cords* is given, and the chink between them is called the fissure of the glottis. In the process of ordinary breathing this chink is wide, so that the column of air can pass through without influencing the vocal cords; but when, by the actions of certain little muscles, the two vocal cords are made to approximate, then the fissure is narrowed to a long and very straight slit; and in this condition, if the air in the lungs be breathed out forcibly, the two sharp edges of the cords are made to vibrate like the reeds of a harmonium, and the column of air contained in the cavity between this and the mouth is affected, and by its vibration produces the audible voice.

Voice and speech distinguished.

The organ of voice

Method whereby voice is produced.

The nature of the sound produced depends on

Physical
conditions
which
modify
the vocal
sounds.

certain physical factors. Upon the natural length of the cords the variety of voice is dependent: the shrill high treble of the child is due to the short cords in the undeveloped larynx. The soprano of the female depends on her smaller larynx; while the baritone and bass of the male are associated with the greater length of the vocal cords. In the growing boy a sudden change takes place in the size of the larynx about fourteen years of age; and coincidently with the beginning of this accelerated growth, the lining membrane becomes thickened and vascular: hence the note of the voice is suddenly altered, producing the characteristic cracked voice at this period.

Tone, pitch
and timbre.

As these vocal cords can have their degree of tension very much varied, so the note produced, which depends on the tension and length of the cords, is liable to vary. The loudness of a sound is due to the amplitude of the vibration, and depends on the force of the out-breathed blast; while the quality depends on the character of the lining membrane, the shape of the throat and mouth cavity, the arching of the palate, the position of the tongue and lips, and the regularity of the teeth.

Voice not
peculiarly
human.

Voice is not a peculiar attribute of man; indeed, there are few of the higher, air-breathing vertebrates which are quite dumb; and many, like the finches, mocking-bird, and nightingale, have a

great range in their singing voice. But man can voluntarily produce a series of sounds far more extensive than those which can be made by any animal, and can vary them in order and combination, in a way and to a degree unexampled elsewhere; but voice is essentially inarticulate, and requires to be modified or supplemented by sounds produced in the mouth before it becomes genuine language.

Speech differs from voice.

With every fundamental note produced by a musical instrument, or by the vibration of the human vocal cords, there is always associated a harmonic series of higher sounds, which are called *overtones* of the primary note. It can be proved by experiment that, by varying the shape of the cavity through which the sound waves pass from the producing instrument, the relative strength of these can be made to vary, as there is correlated with each of these sets of overtones, a peculiar shape of cavity capable of intensifying it, and of commensurately enfeebling others. If, for example, we elongate as much as possible the cavity which extends from the top of the larynx to the lips, by depressing the former and protruding the latter, and if, at the same time, we narrow the aperture of the protruded mouth, the overtones which become intensified produce the vowel sound which we represent by the letter *u* (*oo*). When the opposite condition is produced, and the cavity

How vowels are sounded.

The influence of the shape of the resonator upon the quality of the sound.

shortened as much as possible, with raised tongue, and narrow, transversely slit-like mouth, the vowel sound produced by the intensified overtones is *ee*, while other altered conditions are correlated to the other vowel sounds.

Relation of
each vowel
sound to a
particular
note.

Each vowel shape of the mouth is correlated to a specific note, and singers have learned by practice how much easier it is to sing a given vowel on its appropriate note than on any other. This can be experimentally proved by making the mouth cavity into a series of vowel shapes, and holding before the aperture a series of tuning forks sounding feebly. It will then be found that when the appropriate fork is held before the mouth formed into the correlated shape the sound becomes immediately intensified. With the common Jew's harp we can, in like manner, produce almost any vowel sound, by altering the shape of the resonating cavity of the mouth to which it is applied. These experiments show that the *u* sound is produced when the mouth is in the shape which resonates with the tuning-fork of B flat in the bass clef, and the other vowels correspond to other notes. The vowels are thus laryngeal in their production, but are mouth sounds in development. Other elements are, however, required to produce articulate speech.

Experimental
proofs.

How con-
sonants are
produced.

When, coincidently with the production of vowel sounds, the current of vibrating air travers-

ing the cavity of the mouth is suddenly interrupted, and then renewed, an explosive sound is superadded to, and modifies the vowel sound; these explosives we call consonants, and they vary according to the part of the mouth or throat where the closure takes place. When the interruption takes place by closure of the lips they are labials, as *b* and *p*, but they may be dentals, palatals, or gutturals when produced by contact of the tongue with the teeth, palate or throat. Sometimes the closure is but partial, then the sound is not interrupted but continuously modified. Sounds of this kind are called aspirates and sibilants.

By these varying methods the human speech-organs can produce three hundred and seventy distinct sounds, of which at least sixty are vowels, and three hundred and ten are consonants. Of these we use, in English, not more than seventy-six, of which only fifty are of common occurrence.

Units of
human
speech.

When we consider the small space occupied by the organs of speech, the small range of motion permissible to each, and the enormous differences in the produced sounds due to very slight variations, the definition and range of the speech sounds is remarkable; and it becomes more interesting when we note how closely the physical conditions of the parts about the mouth are associated with peculiarities of sound, and even with characteristic differences of dialect. The

Some
peculiarities
of the pro-
duction of
speech
sounds.

Physical
basis of
difference in
language.

narrow high palatine arch of most Indo-germanic races is associated with the capacity of sounding the cerebral *r* and cerebral *t*, sounds which are difficult or impossible to be produced by races with wider, flatter palates. Similarly the absence of sibilation in some languages, as in many of those of the South Sea Islands, the replacement of *l* by *r* or the converse, and the use of a prosthetic nasal, noticeable in so many African languages, are likewise explicable by the existence of small variations in physical conformation of the mouths in different races. In this respect Philology is really but a subdivision of applied Anatomy and Physiology.

Marks of
design in
speech.

But, in another aspect, the correlated conditions which render articulate speech possible, are worthy of consideration as a prominent evidence of design. The differences between the physical processes which produce the specific sounds are slight, and the conditions under which any of these sounds can be produced are narrowly restricted. To an animal with larger jaws and a longer tongue, speech of the human kind would be physically impossible. The co-existence of the even curve of the teeth, the short concave vault of the palate, the broad, mobile-tipped tongue, and the comparatively free thin lips, with laryngeal cords possessing a wide range of vocalizing, is necessary to a speaking animal. But, behind all these physical parts of the apparatus, there must be the co-ordinating

The organs
of speech
only instru-
ments,
subservient
through the
nervous
system, to
the intelli-
gent mind.

nervous centres directing the order of movement of all these parts, and above this there must be the mental power of formulation of words, and the capacity of associating definite mental conceptions with separate sounds, which makes the difference between the speech of the intelligent man and the meaningless babble of the idiot.

V.

IN the phenomena of human life there is noticeable a certain regular law of periodicity: the actions of the heart, the rhythm of inspiration and expiration, the morning and evening rise and fall of temperature, the recurring need to take in food, and the regularly required period of sleep, are instances of this tidal ebb and flow of activity. Throughout the whole body, work and rest must alternate, for work means transformation of the living tissue, which must be built up again during rest. The state we call sleep is, for the brain, what

Law of
cycle in
human life.

Sleep.

Diminished
oxidation
during sleep.

changes in the tissues are slow, and the waste minimised, so, though nutrition is also lowered, yet repair can now take place with little interruption; and those waste products of cellular activity which have been produced in quantity during the working hours of wakefulness, and which, towards evening, have clogged the living tissues, can now be got rid of, and by passing into the venous blood are removed from the body by the appropriate system of purifying glands.

Practical
deduction.

That rest may be enjoyed to the best advantage, there should be as little visceral work as possible going on during sleep: hence, it is desirable that no food should be taken within at least two hours of the period of rest.

Life cycle of
the
individual.

In the life cycle of the individual, three stages may be distinguished. In the first, nutrition proceeds actively, and repair and growth exceed the waste. Within this period the body increases in size and power; the brain, which at birth is of the capacity of 350 cubic centimetres, grows in two months to the size of 500 cubic centimetres; and by the tenth year is two and a half times larger still; becoming three times this size, or about 1500 cubic centimetres, in the adult.

On attaining to full growth, waste and repair proceed *pari passu* during the middle period of life, and finally in the third stage of the cycle, waste begins to exceed reparation, and the tissues, im-

perfectly nourished, undergo change, diminution, and degeneration: this is the stage of old age. If there were no disturbing external influences in operation, life would end by a gradual sinking or dissolution; but in the whirl of opposing forces among which we live, some jarring condition is constantly being brought to bear on the organism, whose molecular forces are weakened with advancing waste, and this suddenly interrupts some of the vital processes. If, for example, too little or too impure blood be sent from the heart to the brain, cerebral action is stopped, the nervous centres which superintend circulation and respiration become paralysed, and both these functions become for ever suspended. If, on the other hand, some of the vessels in the brain, with walls degenerated in texture, from want of nutrition, are exposed to an undue strain of increased blood pressure, the coats give way, and effused blood presses on and disorganizes the nervous centres. Some such event interrupts nutrition and causes death, the great change. Before it, the organism was a unity made up of mutually co-operating, integral parts. After death, each organ, each molecule, becomes independent, and undergoes chemical change, which rapidly eventuates in the total disintegration of the whole organism, and the dust returns to the earth as it was, and the spirit returns unto God who gave it.

Death usually not due to simple decay

Death from stoppage of brain's action.

Changes produced in the organism by death.

VI.

The body a
temple of
God.

Its beauty.

Its fitness.

Its organized
arrange-
ments.

“KNOW ye not that your body is a temple of the Holy Ghost;” wrote the Apostle Paul to the Corinthians. He thus indicates what is the highest design of the body of man, and though this temple is, like all things earthly, corruptible, yet it is worthy as a dwelling-place of God. It is a temple excellent in beauty. The sculptor and poet have exerted their highest skill in the representation of it. It is a temple admirable in architecture. Its structure has excited the adoring wonder of the Psalmist. It is choice in material, as we have seen in our foregoing studies. It is a temple whose perfectly organized arrangements for repair can long resist and restore the dilapidations of time and accident; cleansed externally by five million sets of external cleansing glands; ventilated by the most perfect apparatus for the admission and thorough transmission of pure air, and for the removal of the impure; heated by a perfect self-acting system of hot pipes; lit by windows of surpassing complexity; having every part connected with its fellows by an almost instantaneous system of communication, which centres in the shrine of the temple, the seat of the conscious mind; and if those temples which we see round about us are not thus

perfect in all particulars, it is because they have been defiled and neglected, turned to base purposes, and degraded from the high calling to which they should have been consecrated.

The prominent lesson which the examination of the human body impresses on us is that of perfect adaptation of means to ends, of structure to function. The unprejudiced mind cannot fail to read in every organ, nay, we may say in every cell and fibre, the inscription of purpose, and to learn thereby that they are the products of supreme power directed by supreme wisdom.

Lesson from-
study of
human
structure.

Purpose
inscribed
upon it.

Man thus stands forth as the crown of creation, the chief of the works of God, even when we confine our view to that portion of his organization which allies him to his lower fellow creatures. But when, in addition, we consider him as an intellectual being, bending the forces of nature to his will; or as a moral being, with a conscience and a sense of right and wrong, or as a religious being, with hopes and aspirations raising him to seek communion with God, we are constrained to say with the Psalmist, "Thou hast made him but little lower than God;"¹ nay more, for hath not God Himself, in the person of His Son, in order to our salvation and restoration to His own image, condescended to take upon Himself our nature, so that the perfection of manhood is the "measure of the stature of the fulness

The crown
of creation

¹ Psalm viii. 5. Revised Version.

His future
destiny.

of Christ.” The Christian revelation assures us that man will yet be exalted to a position inconceivably more glorious than that which he has hitherto occupied, for as human nature in the person of Christ, is seated at the right hand of God, even so shall those who by faith are united to Christ, be elevated to bear the image of the heavenly. For He “shall fashion anew the body of our humiliation that it may be conformed to the body of His glory according to the working whereby He is able even to subject all things unto Himself.” ¹

¹ Philippians iii. 21.



MAN NOT A MACHINE,

BUT

A RESPONSIBLE FREE AGENT.

BY THE

REV. C. A. ROW, M.A.,

(Prebendary of St. Paul's,)

AUTHOR OF

“CHRISTIAN EVIDENCE IN RELATION TO MODERN THOUGHT,”

(Being the Bampton Lecture for 1877,)

“THE JESUS OF THE EVANGELISTS,” ETC.



THE RELIGIOUS TRACT SOCIETY :

56, PATERNOSTER ROW ; 65, ST. PAUL'S CHURCHYARD ; AND
164, PICCADILLY.

Argument of the Tract.

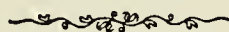
THE appeal is made to common sense against the prevalent materialistic, necessitarian philosophy, theological necessitarianism being excluded from the discussion. What is meant by a free agent is explained, and the limits of human freedom are defined. The necessitarian position, that every thing in man is the result of the conjoint action of matter and force, and therefore necessarily what his bodily organization makes him, and nothing more is stated, and that of the believers in man's free agency is defined. Free agency is shown to be the direct affirmation of our consciousness. We are shown to have a power of originating action. The validity of various objections is examined. The truth of free agency is proved from the universal belief of civilized man, especially as it has been registered in the structure of language and from an analysis of duty as affirmed by conscience. Obligation must centre in a Being external to ourselves. Both we ourselves who owe, and the Being to whom we owe, must be possessed of a moral nature, *i.e.*, both must be free agents.

A summary of the testimony of the past experience of mankind to free agency is given. Various materialistic theories on the subject are refuted. The distinction between physical and moral agents, instinctively and universally felt, is pointed out. The issues of the necessitarian philosophy are indicated. The basis of moral obligation according to this philosophy is examined, and what would be the practical effects of utilitarianism, were it generally accepted, set forth. The self-destructive character of necessitarian philosophy, and the fact that God alone can estimate the degree of responsibility attaching to each individual are shown. The confidence is expressed that God will judge and act aright.

MAN NOT A MACHINE,

BUT

A RESPONSIBLE FREE AGENT.



WIDESPREAD philosophy at the present day affirms that there is no distinction between the forces which energize in the material and in the moral universe ;

No distinction between material and moral forces according to a widespread philosophy.

but that both are alike subject to an iron law of necessity. It teaches that man is the result of the conjoint action of those necessary forces of nature, by which his physical frame has been built up, and of the surroundings in the midst of which he is placed ; that he has no power of determining his own actions, but that they are determined for him by the conditions of his birth and his environment ; that he cannot help acting in conformity with the impulse which happens to be the strongest ; and that if all these conditions could be perfectly known, every action of every individual could be predicted beforehand with the same certainty as an astronomer predicts the occurrence of

If this
philosophy
be true, man
is a
machine.

an eclipse. From this it follows, if this philosophy is a true account of the realities of things, that man is as much a machine as a steam engine; and that the hitherto accepted idea, that he is a free agent and a responsible moral being, is a delusion.

Reason why
the subject
cannot be
treated with
indifference.

As long as paradoxes of this kind are confined to the closets of a few speculators, they may safely be left to be dealt with by the common sense of mankind; but when they are loudly proclaimed on the house-tops, as furnishing the true account of the moral nature of man, upon the authority of a number of well-known and imposing names in philosophy and science, and a system of ethics is erected on them, which is declared to be the destined Gospel of the future, it is impossible any longer to treat the subject with indifference, for it is only too evident that if such views are generally embraced as true they will not only be subversive of Christianity, but of the accepted principles of moral obligation and of the very foundations on which society rests. Let us therefore inquire as briefly as we can into their validity, not in terms of high philosophy, but in such as will be intelligible to men of ordinary understanding. But, inasmuch as great confusion of thought has been introduced into this controversy by a lax use of language, it will be necessary before entering on the argument to lay down clearly what we mean when we affirm that man is a free agent.

What is
meant by
the affirm-
ation that
man is a
free agent.

1. We mean that man is not bound by the iron

law by which necessary agents are bound ; but that he is an agent free to adopt, or to forbear adopting, a particular course of action, according to the dictates of his reason ; and that he is capable of choosing between the different impulses and motives which urge him to action, and of acting on one, and of declining to act on others. This power is what we mean when in philosophical language we speak of the freedom of the will.

He is free to adopt or not a particular course.

2. We affirm that man possesses a power of self-determination, that the possession of such a power by an agent is essential to constitute an action moral ; and that without it there can be neither morality nor responsibility. Our position is that the universe consists of two factors : one, consisting of that in which necessary law reigns, and where the agents cannot act otherwise than they do ; the other, where they are capable of exercising choice. To the latter we attribute responsibility, to the former none.

He possesses the power of self-determination.

3. But as necessitarians urge that the doctrine of the freedom of the will is equivalent to affirming that man can act without a motive ; that he has a power of modifying his character according to his pleasure ; that he can pursue any course of action he pleases ; and that it also subjects human action to the dominion of caprice, and even makes man a creator of force, it becomes necessary to lay down clearly the real position which is taken

Allegations of necessitarians.

on all these points by those who affirm that man is a free agent.

Limitations
of human
freedom.

(1.) I observe that in affirming human freedom, it is by no means intended to assert that this freedom is devoid of limitations. All that is intended is, that within certain limits, man possesses such an amount of freedom as is sufficient to constitute him a responsible agent ; and that where his freedom ceases, his responsibility ceases also. What we assert is, that we are capable of choosing between different motives and impulses to action ; and that we are under no constraining necessity to yield to what is commonly called the strongest motive, which, in the language of this philosophy, really means the impulse which, by its gratification, would afford the greatest amount of pleasure.

Where
freedom
ceases re-
sponsibility
ceases.

Different
kinds of
motives.

We also affirm that the power of motives to act on the will cannot be estimated by a common measure, such as the amount of pleasure with which the gratification of this or that impulse is attended ; but that motives differ not only in intensity, but in kind, some appealing to the higher, and some to the lower principles of our nature ; that our reason is capable of discriminating between these different classes of motives, and that our power of volition enables us to choose the higher, though the pleasure which attends their gratification may be less, and to refuse to yield to the lower, though the pleasure with which the gratifi-

cation of them would be attended, would be greater.

(2.) Further, the affirmation of the freedom of the will is by no means equivalent to the affirmation that the will is capable of originating force; all that it affirms is, that it is capable of giving a direction to forces already existing, by diverting them from one direction, and turning them into another, in the same manner as the pointsman acts, who does not create force, but turns it into a particular direction.

The will cannot originate force, but only give direction to existing forces.

We also affirm that an act of volition is the invariable antecedent of all rational action; that our reason is capable of sitting in judgment on the character of our actions, of concentrating our attention on one set of motives, and of withdrawing it from another, in accordance with its judgments, thus rendering it possible for us to act on a higher motive, in preference to a lower and—in the sense above defined—a stronger one; and that our wills after adopting the decisions of our judgments, are capable of calling into activity, and of giving the proper direction to those forces which are necessary to realize them in action. Such an amount of freedom is necessary to constitute man a moral and responsible agent; and this being sufficient, it is unnecessary to claim more.

An act of volition the invariable antecedent of rational action

(3.) The affirmation that man is a free agent, is by no means equivalent to the assertion that he can

A free agent does not act without a motive.

Without an impulse the mind remains passive.

Man is under no compulsion to act in this way or that.

Solicitations of our lower appetites may be rejected.

act without a motive, *i.e.*, without something impelling him to action ; all that it asserts is, that we possess a power of choosing between our different impulses and motives. We fully concede that without an impulse of some kind urging us to action, our minds must continue passive. But our impulses may be of the most divers kinds, and of different degrees of intensity, varying from those which instigate us to the most disinterested acts of self-sacrifice, to those which would impel us to the lowest forms of sensual gratification. In affirming, therefore, the freedom of the will, all that we assert is, that man possesses a power of choosing which of these classes of impulses he will gratify; and that he can restrain those which his reason rejects, and act on those which it approves; in a word, that he is under no compulsion, as animals are, to yield merely to the impulse which happens to be the strongest. Yet we fully admit, that such is the strength of the lower impulses of our nature, that they frequently overbear the decisions of our reason. But even here the principle of responsibility enters; for although the temptation may be strong, yet until the power of self-control has been destroyed by habitually yielding to it, we are conscious that we possess the power of rejecting the solicitations of our lower appetites, if it is our will so to do, and that it is a matter of experience that we at times actually do so.

An analysis of the mode in which temptation to evil gets the better of a man before he becomes utterly depraved, will make this plain. What is the course which it pursues? A desire for some gratification presents itself to the mind. The question immediately arises, shall we yield to the solicitation? Our conscience and moral sense say no, for it is wrong to do so. Our animal appetites say, it is pleasing, and urge us to the gratification. Are we then irresistibly impelled to yield to them? We all know that we are not. It is true that if we continue contemplating the pleasure with which the indulgence of the appetite would be attended, the yielding to the temptation will be the certain consequence. But if we cease to keep our minds fixed on the pleasure, and by a resolute act of will concentrate our attention on the great law of duty, this result need not follow. Such a power all of us are conscious not only of possessing, but of having actually exercised; and as long as we continue to exercise it, we are masters of our actions; but if we continue to contemplate the pleasure, and banish out of our minds the law of duty, we fully admit that the attempt to gratify the evil impulse is the inevitable result.

How
temptation
gets the
better of a
man.

How we
overcome it.

The believers in free agency therefore fully concede that the repeated gratification of an evil passion gradually destroys the moral sense, and with it the power of resisting temptation. Of this

The moral
sense and
power of
resistance
destroyed by
the repeated
gratification
of evil
passion.

The responsibility of the self-incapacitated accrued at an earlier stage.

the habitual drunkard is a striking example. Such a character may be said in a certain sense to have ceased to be a free agent, and yet he is justly held to be responsible. His responsibility, however, accrued at an earlier stage, when, contrary to the dictates of his conscience and moral sense, he yielded to his evil impulses, and thereby destroyed his power of self-control. In such a case all that is necessary for the believer in human freedom to contend for is, that it was once in his power to refuse to gratify his evil appetites ; and that if a man has formed a habit which has become irresistible, he is responsible for all the consequences which it was in his power to have foreseen. In this case, therefore, our position is that man possesses such an amount of freedom, that he is the master of his actions, until by his own act he has destroyed his power of self-control. What, therefore, we affirm is, not that a man can act without a motive, but that he can choose between one motive and another, by concentrating his attention on one, and withdrawing it from the other, and that he can do this until by his own voluntary acts he has destroyed his power of self-determination.

A free agent cannot modify his character at pleasure.

4. Nor is the assertion that man is a free agent equivalent to the affirmation that it is in his power to modify his character at his pleasure. Believers in human freedom recognize the following facts, which modify responsibility, but do not destroy it.

(1.) That the conditions under which we are born, are wholly determined for us by a higher power ; and consequently, *so far as our characters are determined by them*, our responsibility is modified.

Facts which modify responsibility.

Conditions of birth.

(2.) That we are born with certain inherited appetences and tendencies which are entirely independent of our choice ; and consequently, *so far as our actions are the inevitable results of these*, we are irresponsible.

Inherited appetences and tendencies.

(3.) That it is a matter of unquestionable fact that men not only greatly vary in intellectual power, but also in that fundamental groundwork on which their moral characters are subsequently erected, some being from their earliest childhood more inclined to good, and some to particular vices than others ; consequently, *so far as our actions are directly influenced by these variations*, it modifies our responsibility as individuals.

Variations of moral character.

(4.) That habits formed by ancestors are in some mysterious way transmissible to their descendants, not as formed habits, but as tendencies to particular classes of actions, which tendencies act in a manner somewhat analogous to instincts. This transmission, however, is very far from being invariable ; and in the present state of our knowledge, we are entirely ignorant of the law in conformity with which it acts. The fact, however, is undoubted, that habits formed by parents, not unfrequently appear as tendencies to particular classes of action

Transmitted habits.

in their children ; and *when this is so, in as far as they are quite independent of their choice*, it modifies responsibility.

The moral atmosphere in which a man has been born and educated exerts an influence on his character.

(5.) A very important influence is exerted on the character of the individual by the moral atmosphere in which he has been born and educated. This fact frequently makes the precise degree of responsibility which attaches to a particular person a very complicated question. External circumstances also of various kinds, such as climate, exert a certain amount of influence on the formation of character. These, therefore, *as far as they are independent of our choice*, modify our responsibility.

Habits of evil.

(6.) The action of completely formed habits is almost instinctive ; and it is an unquestionable fact that habits of evil, when fully formed, paralyze the will. In this case, therefore, although it is impossible for human laws to recognize such qualifications of responsibility (which can be only justly estimated by the all-seeing eye), the degree of responsibility for a particular act on the part of the individual, *is only in the degree in which he has contributed to the formation of the habit* by habitually yielding to temptations which it was once in his power to resist.

Illustrations.

A few illustrations will set the above positions in a clear light.

Variations of intellectual capacity.

It is unquestionable that men vary greatly in intellectual capacity, and that over these variations they exert no control. But our intellectual and

moral being constitute a unity ; and the imperfections of our intellects affect our moral judgments, and the actions which are consequent on them. To take an extreme case, insanity. There it is universally allowed that an intellectual defect renders the subject of it irresponsible. Consequently, minor degrees of this imperfection must modify our responsibility in a corresponding ratio. Such imperfections, being independent of our wills, are not our sins, but our misfortunes.

Insanity renders its victim irresponsible.

Again, with respect to children. No one who has made them the subject of careful observation, can doubt that they are born with fundamental differences of disposition. Thus their tempers greatly vary even in early infancy. To some it is natural to speak the truth, others display an inherent tendency to falsehood. The same remark is true with respect to a large number of other moral characteristics. Such tendencies manifest themselves long before that stage of mental development is attained which is necessary for constituting a man a responsible moral agent. These facts we are bound to recognize, and also the further fact that we have had no share in implanting these tendencies in ourselves. Consequently, as far as they have affected the formation of our characters, we are irresponsible for the influences which they exert. Yet while they modify, they do not destroy responsibility ; for every one of us is conscious that when our rational

Differences of disposition in children.

Their early manifestation.

They modify but do not destroy responsibility

faculties have attained to their full development, we possess the power of modifying, and even of controlling our primary impulses, by means of the principle of habituation, a power which has been exercised in numerous cases.

The power of modifying character is the exclusive prerogative of man.

This power of modifying and of gradually altering character is the exclusive prerogative of man, and constitutes one of the great distinctions between responsible and irresponsible living agents. Animals cannot help acting on their impulses; and are incapable by their own inherent powers of modifying their instincts. I say, *by their own inherent powers*, for whatever modifications they are capable of, are acquired by a controlling power which is exerted over them by man, and not by a power which is inherent in themselves. Thus all observation proves that an animal unaided by man is incapable of self-improvement, of modifying a natural tendency, or exerting a control over its actions. But such a power we are all conscious of possessing; and many of us, of having actually exerted. Man therefore possesses a power, within certain limits, of modifying his character and of regulating his actions. So far then as he exerts, or neglects to exert this power, he is responsible, both for his character and his conduct; but for his primary instincts, and for his character and actions, *as far as they are the necessary result of these primary instincts*, he can possess no responsibility.

Animals unaided by man are incapable of self-improvement.

Man is responsible for exerting his power of self-improvement, but not for his primary instincts and their necessary results.

The effect which external circumstances, and the moral atmosphere in which men are born and educated, exert on our free agency, requires a few additional observations. It is an undoubted fact that a particular type of character is impressed on different races of men, the outlines of which are transmitted from generation to generation; of this the Negro race in Africa, the Bengalee in Asia, and the Gallic in Europe, are striking examples. Yet even this is by no means uniform, but varies within certain limits. It is no less true with respect to the masses of mankind, that in the moral atmosphere in which they have been born and educated, they for the most part live and die. But this, though for the most part true, is by no means invariably so. Numerous instances unquestionably have occurred, of men who have elevated themselves above, or who have sunk below, the condition of their birth and their environment. This proves that the results above referred to are not brought about by the action of a necessary law; for, if this were so, they would not happen for the most part, but invariably, like the results of the law of gravitation. Similarly, it has been urged, that it can be proved by statistics, that man is the creature of his surroundings; and that what we designate our wills, exert no power in determining our actions. Thus, for example, it is affirmed that the number of suicides which take

Race types
of character.

Variations.

The masses
of men live
and die in
the moral
atmosphere
in which they
have been
born and
educated.

Numerous
exceptions
prove that
this is not
the result of
the action of
a necessary
law.

The
argument
against free
agency from
statistics.

place in a particular country, varies with the population, and presents the same results year by year; that the same is true with respect to crimes generally; and that even the number of marriages,—a matter, in which it is alleged that will ought to exert great power—varies with the price of the necessaries of life. Hence the inference has been drawn, that our belief in free agency is a delusion.

The inference from statistics assumes the point at issue.

Free will not capricious.

Yearly statistics not identical as they would be if necessary law were dominant in human life.

This inference assumes the point at issue. The statistics in question present us with the combined result of our impulses, our wills, and of the influences which are exerted over us by external circumstances. The argument owes all its plausibility to the most incorrect assumption that the believers in free agency affirm that the will acts at hap-hazard, or by caprice. But further: the inference itself is an incorrect deduction from the facts, for although the numbers in question closely approximate to each other from year to year, they are by no means identical, which they ought to be, if necessary law was the dominant power in human life. The above arguments therefore wholly fail to prove that man is not free to act, or to forbear acting, within certain definite limits; and no rational believer in human freedom wishes to affirm that our power of self-determination is devoid of limitations.¹

¹ I am here referring to the positions which have been set forth by Mr. Buckle and other similar writers.

Such are the facts of our moral nature as they bear on the doctrine of free agency. It has been necessary to set them thus definitely before the reader, because the reasonings of necessitarians owe no small portion of their plausibility to the mis-statements of the views of their opponents. The facts, as above explained we admit, but the inferences which have been deduced from them we deny. Our position is, that while they modify responsibility, and render it difficult, even impossible, for man to determine its precise amount in numerous individual cases, they by no means destroy it. We freely concede that man is not able to do everything which he pleases—there are limits to his freedom, and circumstances in the formation of his character, over which he can exert no control, which modify his responsibility; but he has a sufficient amount of freedom within these limits to constitute him a free responsible agent.

Admitted facts modify but do not destroy responsibility.

Man has sufficient freedom to constitute him a free agent.

Having thus defined the positions which are taken by the believers in the free agency of man, it will be necessary to set before the reader those of philosophical necessitarians whose theories we are controverting.

Their position admits of being very briefly stated. According to them, everything in man is the result of the conjoint action of matter and force, and he is necessarily that which his bodily organization makes him, and nothing more. They

The position of philosophical necessitarians of the present day.

This philosophy rests on *a priori* reasonings and assumptions.

contend, therefore, that as matter and force are necessary agents, man, being their product, must be a necessary agent. Otherwise it would be possible for an agent to evolve out of itself what was never in itself, a position which we readily admit is intrinsically absurd, for it is obvious that necessary and free agency cannot co-exist in the same subject. This philosophy, therefore, let it be observed, rests not on facts, but on assumptions and *a priori* reasonings; and on the strength of these, it calls on us to reject the clearest intuitions of our consciousness. We, on the contrary, contend that it contradicts the great facts of human nature, and the universal experience of mankind. Let us, therefore, consider the grounds on which the overwhelming majority of the human race have in all ages believed, and still continue to believe, themselves to be free, and not necessary agents.

Free agency the direct affirmation of our consciousness.

Analysis of our mental acts before engaging in action.

1. Our free agency is a direct affirmation of our consciousness, *i.e.*, we know that we are free agents; in other words, we are certain that when an impulse to a particular course of action presents itself, it is in our power to enter on it, or to forbear. A brief analysis of our various mental acts, prior to our engaging in action, will establish this beyond a doubt. What then is the line of conduct which we pursue? When an impulse to engage in a course of action presents itself, before we engage in it, we

deliberate on its desirability. If different impulses present themselves, our reason sits in judgment on their various suggestions, and pronounces in favour of one and against others, according to its sense of fitness. This act of judgment is followed by an act of volition, in which we determine to adopt the course of action to which our reason has assented. Then it is, but not till then, that we set in motion the secret springs of our activity, and attempt to carry the action thus determined on into execution. Of all these processes our consciousness is direct; and each, and every one of them, we can verify for ourselves by a careful observation of our own minds. Every step in them, therefore, proves that we are free, and not necessary agents, for the idea that a necessary agent can either deliberate or choose is an absurdity. Further: a necessary agent is incapable of being tempted to break the law of its being, on it temptations will not act; but although the moral law is the law of man's being, and that which his conscience tells him that he ought to obey, he is capable of breaking it. Such a power is only consistent with his being a free, and not a necessary agent.

Judgment of
our reason.

An act of
volition
follows

We are
conscious of
these
processes.

They prove
our freedom.

A necessary
agent cannot
break the
law of its
being.

In opposition to this direct testimony of consciousness, and as a set-off against it, necessitarians affirm that our various motives admit of being reduced to a common measure, viz., the pleasure which their gratification gives, or the desire of each

The neces-
sitarian
contention.

The power of motives in proportion to the pleasure anticipated from their gratification, according to necessitarians.

individual to realize his own greatest happiness; that motives do not differ in kind, but only in degree; and that their power to impel us to action is in exact proportion to our sense of the ultimate amount of pleasure which we think will result from their gratification. Hence the inference is drawn, that man cannot help acting on the strongest motive, *i.e.*, adopting that course of action which seems to promise him the greatest amount of pleasure; for, in the language of this philosophy, pleasure and happiness are identical. This being so, it is urged that we deceive ourselves in imagining that we exercise any real choice in determining the course of our actions; but, on the contrary, they are determined for us by the necessity of acting on the strongest motive, with the generation of which we have had nothing to do.

This philosophy allows that we have the power of choosing some distant good.

To this I reply, that even if we admit, for the sake of argument, that all motives can be measured by the common measure above referred to, still this philosophy allows that we possess the power of choosing some distant good, instead of giving way to an impulse which urges us to a great and immediate gratification. This alone is sufficient to prove that we possess a power which is capable of controlling our impulses and of choosing between our motives, and that we are under no necessity of yielding to the strongest. I say the strongest, because it is an unquestionable fact in human

nature that the impulses which prompt us to immediate indulgence are far more powerful factors to excite us to action than the contemplation of some distant good. Consequently, if the former are to yield to the latter, this can only be effected by the exertion of a powerful act of self-control. It follows, therefore, that the possession of this power, of which we all are conscious, proves that within certain limits we are free agents, because without freedom an act of self-control would be impossible, for the two stand to each other in as close a correlation as the concave and convex of a circle.

The possession of this power proves that we are free agents.

But we deny the truth of the position that our motives can be measured by the common principle above referred to, and that their power to produce action is in exact proportion to their intensity. On the contrary, we maintain that motives differ in kind as well as in degree, and that it is in our power to follow the suggestions of a higher motive of less, and to restrain a lower one, of greater intensity. What, I ask, does the position against which I am contending, invite us to believe? This and no other, viz., that the impulse which urges the drunkard to his bottle, and that which urges the martyr, out of regard to what he considers truth and duty, to yield himself to a torturing death when he could escape by an act of apostacy, can be measured by the common measure of self-gratifica-

Motives differ in kind as well as degree.

The drunkard and the martyr cannot be measured by the common measure of self-gratification.

tion; and that martyrdom is only one of the forms of self-love,—for this is what the pursuit of the greatest happiness really means. Such a position the common sense of mankind will pronounce to be incredible.

Objection
answered.

It has been urged, however, that the martyr expects to be remunerated hereafter for his sufferings here, and consequently that after all he is only pursuing his own greatest happiness. But there have been self-sacrificers in the cause of what they believed to be truth and duty, who could see no prospect of reward in this life, and who had no *certain conviction* of the reality of one to come. Such was Socrates, who although he entertained a strong hope that he should survive the stroke of death, yet admitted that he was devoid of a full assurance that he would. The same is true of not a few who have had no belief in a future state. Does it, I ask, enter into the calculation of any one who leaps into the water at the hazard of his life to save a man from drowning, that he is realizing his greatest happiness by the act either in this world or in the next? He may think it noble to do so: he may think it his duty; something within him says, You ought to attempt to save that life at the hazard of your own; but a reference to his own greatest happiness never enters into his thoughts. If it did, instead of impelling him, it would deter him from the act.

Socrates had
no certain
anticipation
of future
reward.

The thought
of happiness
does not
enter into
the mind of
the man who
saves
another's
life at the
risk of his
own.

All human activity, it is true, originates in a desire to gratify some impulse of our nature; but it by no means follows that that impulse is a desire which terminates in self. If it did, self-sacrificers would be few.

2. Our consciousness is direct that we possess a power of originating action, and that we do originate action whenever we exert an act of will, or volition. It consists of two factors, the consciousness of an "I" or "Ego," as an existing entity, and that this "I" possesses the power of self-determination. But our consciousness of the I, or Ego, from which a sense of voluntary agency is indispensable, involves the belief in the existence of something which is not self, whereas over that which is non-self, our consciousness tells us that we can exert no direct control. Further: we possess a direct consciousness of *willing* to act, and that on doing so, action follows; and of *willing* not to act, and the springs of our activity stand motionless. Inasmuch, therefore, as no certainties can be greater than these different presentations of consciousness, it follows by inevitable necessity that they prove that man is a free, and not a necessary, agent.

We are conscious of the power of originating action.

We are conscious of willing to act or not to act.

But it has been objected that consciousness may be, and frequently is, mistaken, and therefore that its presentations are no certain guide to truth. To this objection I reply by putting to those who urge

It is objected that consciousness may be mistaken.

All
reasoned
truth rests
on some
affirmation
of our
conscious-
ness.

The denial
of the
validity of
truths which
do not admit
of proof
reduces all
human
knowledge
to a mass of
shapeless
ruins.

it the question, If the presentations of consciousness are no guides to truth, what better guides do we possess? For it is an indisputable fact that all reasoned truth, whether it be inductive or deductive, rests for its ultimate validity on some affirmation of our consciousness. This is true alike of the axioms of mathematics and of the information which is furnished by our senses. To the latter, consciousness is the sole witness ; and with respect to the former, all truths which admit of proof must be deduced from higher truths which do not admit of proof, the truth of which is given in an act of consciousness, in which we see the truth of the affirmation in the clear light of intellectual vision ; and which, owing to the fundamental constitution of our minds, we are incapable of believing to be otherwise than true. The denial of the validity of such truths therefore reduces the whole body of human knowledge to a mass of shapeless ruins, and renders it impossible to affirm of a single proposition that it is true or false ; for even the affirmation that all human knowledge is invalid must involve the assumption of some proposition, the truth of which has no other foundation than the validity of some presentation of our consciousness. Of the truth of these, we are even more certain than we are of the existence of an external world, because our consciousness of the former is direct, whereas our belief in the existence of the latter is

an inference from the former. Further, as all knowledge which we derive from our senses depends on the validity of their presentations, and these can only be verified in an act of consciousness, it follows, if the primary affirmations of consciousness above referred to are not trustworthy, that all our knowledge of the external world must be equally untrustworthy. I need hardly say that such an affirmation saps the foundation on which not only the whole of physical science, but the whole course of human life is built, and is therefore incredible. We affirm, therefore, that the belief in our free agency rests on precisely the same foundation as that of our highest certainties; and if the belief in question is a delusion, all our other certainties must also be equally delusions.

If the primary affirmations of consciousness are untrustworthy, all our knowledge of the external world must be equally untrustworthy.

Belief in our free agency rests on the same foundation as our highest certainties.

From these considerations the following all-important conclusion follows. All reasonings which lead to conclusions which contradict the primary affirmations of our consciousness must be the result either of incorrect assumptions, or of some error in the intellectual processes by which they have been deduced. Consequently, all those processes of reasoning by which necessitarians endeavour to prove that man is not a free agent must be faulty somewhere; because they lead to conclusions which contradict the greatest of our certainties, viz., the direct affirmations of our consciousness. When, therefore, any one endeavours

Conclusion.

to prove that our belief that we are free agents is a delusion, ordinary men may with confidence reply to the necessitarian philosopher, We are inadequate judges of your abstract and complicated reasonings ; but of one thing we are certain, viz., that your conclusions must be false, because they contradict the clearest affirmations of our consciousness, of the truth of which we are as certain as we are of our own existence, and far more certain than we are of yours. Such an answer will both approve itself to common sense, and stand the test of a sound philosophy.

The validity
of the
testimony of
conscious-
ness.

Let us now examine the validity of the objection above referred to, that our consciousness of an object does not prove its real existence. What then are the facts? for it is with facts and not with abstractions that we have to deal. I fully admit that our consciousness of an object does not necessarily prove that it has an existence external to the mind. It is an unquestionable fact that in numerous cases of mental disease, the mind is capable of presenting to itself images to which there is no external reality corresponding. But when reasoning on such a subject, the appeal lies, not to what the mind does when diseased, but to its action when sound. If it be asked, What is the criterion of mental soundness, I answer, the concurrent testimony of considerable numbers of men. When numbers thus concur in affirming

The appeal
lies to the
sound mind

that they perceive a particular object, we may safely conclude that it is no figment of the imagination. But if it be urged that instances have occurred where large numbers of enthusiasts have been the prey of delusions of this description, then the appeal lies to a still wider testimony, and finally to that of ninety-nine hundredths of mankind. When this concurs, the conclusion must be accepted as final.

The conclusion that must be regarded as final.

But the subject which we are now considering is independent of the question, whether the testimony of consciousness proves the existence of external realities corresponding to its presentations. In the present case we have only to do with internal facts; and respecting these its affirmations are necessarily valid. This is true even of the madman and the enthusiast, their mental eye really perceives the objects which they believe that they see. Their consciousness is not at fault; but their error consists in assigning to its presentations, an existence external to their minds. But in the case which we are considering, the testimony of our consciousness to our free agency has nothing to do with the existence of any thing external to ourselves; but it is strictly limited to testifying to the truth of an internal fact, that internal fact being the truth of its own perceptions. In a word, it testifies to what it sees, perceives, and feels. To all this, its testimony cannot but be valid. We

We have to do with internal facts.

The testimony of consciousness to our free agency has nothing to do with anything external to ourselves.

feel that we are free either to act or to forbear acting. Consciousness here testifies to a fact of the existence of which it is the one competent judge. The possession of such a power constitutes us responsible agents.

The structure of language bears witness to free agency

Next, let us consider the testimony which the structure of language gives to the great truth of man's free agency. Whatever may have been the original mode of communication among our primitive ancestors, it is an admitted fact among philologists that all existing languages, with the exception of a few root words, have been gradually elaborated by the human mind; and that in the course of this elaboration they have passed through various stages of development, of which their present forms are the result, and furnish us with the history. Language therefore constitutes a register of the universal experience of mankind. As such, it testifies to an all-important fact in this controversy, that those who have invented and developed its existing forms (the process was an unconscious one) have been unanimous in believing themselves to be free agents. So strongly has this belief impressed itself on its structure that the necessitarian, when he is engaged in arguing against free agency, is compelled to express himself in terms which take for granted the truth of the very thing which he is attempting to dispute; so completely has the belief in free agency held possession of man's entire

The necessitarian is compelled to express himself in terms which assume what he disputes in arguing against free agency.

sphere of thought. If necessitarianism is true, it will be necessary to reconstruct the forms of language, to bring them into harmony with its principles. A few examples of this its testimony will suffice as illustrations.

The conception involved in the pronoun "I" assumes the existence of ourselves as conscious self-determining agents. It is impossible to use it in conjunction with any active verb without assuming this. What, I ask, do we mean, when we use such expressions as "I do this, or that," or "I will do this, or that," or "I will forbear to do this, or that"? It is evident that when we thus speak, we conceive of ourselves as being self-determining agents, and the voluntary causes of actions. Again, when we use the pronoun "my" we conceive of that being which we designate "self"¹ as the possessor of other things, which although most closely connected with ourselves, are yet distinct from ourselves. Thus we speak of our hands, our feet, our bodies, and our understandings. What, I ask,

The pronoun "I" assumes our existence as self-determining agents.

The pronoun "my" assumes that we are possessors of things distinct from ourselves.

¹ I do not here undertake to define the metaphysical elements of self, or to determine how far these and various other things may constitute elements in self. All that I wish to observe is, that our ordinary consciousness affirms the existence of a substratum, in which those things exist, of which that consciousness is capable of predicating "My." This consciousness therefore affirms that something exists which we call "ourselves," which is distinct from that which we predicate "my," or in other words, that the self which possesses and the thing possessed cannot be identical.

Mr. Mill
and Mr.
Spencer use
language in-
volving a
direct con-
tradiction of
their own
positions.

do such expressions mean? Obviously, that we view the "I," or Ego, as the possessor of these things, and as the groundwork in which they subsist. Even writers who, like Mr. Mill and Mr. Spencer, deny the existence of free agency (for such a denial is involved in the denial of the existence of self as distinct from our ever varying acts of consciousness), are obliged to use language which involves an assumption which is directly contradictory to their own positions. Thus they affirm that what we are conscious of as ourselves, is nothing more than the sum total of our consciousness at any particular moment. But inasmuch as these consciousnesses are in a state of perpetual change, it follows, if ourselves and our different states of consciousness are identical, that that which we designate ourselves, can have no permanent existence. Yet they habitually speak of themselves as conscious of the past and as originators of action just like other men do. But further, it may be justly asked, How is it possible that the "I," or Ego, can be conscious of this or that, if the I is nothing but the consciousness itself; and that, too, a consciousness in a condition of perpetual flux; and which has no existence independent of it. Such writers, to be consistent, ought to substitute in their writings for the pronoun "I," the following complicated and cumbrous paraphrase, "The sum total of the consciousnesses at any particular moment, to

What they
ought to
substitute
for the pro-
noun "I."

which the name of the writer is attached, does, thinks, feels, or possesses this or that." Common sense will have no difficulty in perceiving, if such a substitution were made, for example, in the writings of Mr. Spencer, consisting as they do of between four and five thousand pages, containing a large number of very complicated scientific terms very difficult to realize in definite thought, that it would have the effect of making a philosophy, already sufficiently cumbrous, a hundred times more cumbrous still. Nay more, if his language were in all other respects to be corrected, so as to make it an adequate expression of his dogmas, it would make his writings unintelligible to all, except those who are already imbued with his principles, if even it would convey any definite meaning to them.

The effect of such a substitution.

The previous considerations therefore render it certain that the fundamental groundwork of language is based on the assumption that the I or Ego is a self-determining agent, capable of volition and originating action. The contrary supposition involves the assumption that we are not agents, but things; not originators of action, but only capable of being acted on. If this is true philosophy, it is false to say, I did this, or that, the real fact being that something else did it; for, according to the theory I am combating, the I has no existence other than the ever-changing acts of consciousness, and is never active, but is

The groundwork of language based on the assumption that the Ego can will and originate action.

always passive. This being so, it will be necessary, if the language of the future is to be an accurate expression of the realities of things, that it should discontinue the use of every term which implies that man is a voluntary cause of action, and substitute the passive for the active verb, besides making other most important reforms in the structure of language.

Another set of terms which testify to the universal belief of mankind in free agency.

Further: there is another set of terms, such as I will, I can, I might, I could, I would, and I ought, which testify to the universal belief of mankind in their being free agents, and to their possession of a power of self-determination. So deeply are these terms incorporated into the structure of language, that it is impossible to write a paragraph of any length without using one or more of them. What then do they tell us respecting the opinions of those by whom language has been evolved? Obviously that they were believers in their own free agency; for every one of these terms assumes it, yet on the principles of the necessitarian philosophy they are devoid of meaning. Take, for example, the expression, I will. We not only use it in reference to the future, but to denote purpose and deliberate intention, *i.e.*, that it is our pleasure and firm determination to do some particular act. All such expressions would be meaningless, nay, misleading, if we were impelled to action by a power over

We use the expression "I will" to denote purpose and firm determination.

which we could exert no control. Moreover, a determined act of volition is capable of exerting such a power that it can overbear the strongest of our natural impulses. To enable a man to rule his fellows a strong will is indispensable. Similar observations are applicable to the other terms. Every one of them implies the consciousness of a power to act or to forbear acting. If, then, the necessitarian philosophy is a true account of the actualities of things, all men in all ages must have been the prey of one of the greatest and most incredible of delusions.

If necessitarianism is true, men in all ages must have been the prey of incredible delusion.

But the term, I ought, is so intimately connected with our conscience and moral nature, that it requires a separate consideration, owing to the fact that this controversy has been thrown into the utmost confusion by being mixed up with a variety of theories which have been propounded respecting the mode of their origination. Once more, therefore, I must ask the reader to observe, that in this discussion we have nothing to do with the question how these faculties may have originated. We are concerned only with what our consciousness testifies to existing facts, which will still be facts, whatever may have been the origin of our moral nature, even if it could be proved (which it certainly has not), that the original progenitor of man was some brutal ancestor. Further: our opponents are in the constant habit of ap-

The term "I ought."

We have nothing to do with the origin of our faculties in this discussion.

pealing to man in a savage state ; and they urge that savage man is devoid of such a conception as "I ought," and possesses no trace of a conscience. Many of the assertions which have been made on this subject have now been proved to be inaccurate ; but in this discussion let it be observed that the appeal lies, not to imperfect man, but to man in the full condition of his development as man, *i.e.*, to civilized man. Whatever, then, may be the condition of savages with respect to the conception of duty or oughtness, it is an indisputable fact that it is one which is possessed by all men who are in a state of civilization, account for its origin as we may. The only question, therefore, which concerns us in this controversy is, what do the conscience and moral sense of civilized man testify to existing fact ? This is the real point at issue, and we must not allow our attention to be diverted from it.

The appeal is made to civilized man.

What, then, do we mean when we say, "I ought ?" We affirm that it is right to act in this or that particular manner ; and that it is wrong not to do so. We are, in fact, presented with an alternative, a right and a wrong course of action. When, therefore, conscience says, "You ought," it decides in favour of one of these alternatives, and for the rejection of the other. But the being which is capable of choosing between two alternatives must be a free agent. Further : the con-

The meaning of the term "I ought."

ception "I ought," involves the contemplation of an ideal, which the Ego seeks to realize, and feels that it is bound to attempt to realize, but which it has the power of forbearing to do. The conception of "oughtness" therefore announces a law which we feel to be binding on ourselves, and creates in us a sense of demerit if we fail to comply with its demands. Further: when conscience announces this law, it makes no reference to the opinions of others, but sternly affirms, You ought so to do, though the whole world is against you. It utters its commands irrespective of all consequences, and even if the thought occurs, "This is a hard saying; who can hear it?" it refuses to relax the command, and visits the transgressor with a feeling of dissatisfaction. It simply says, You owe it to do this; and whatever hope may be suggested by reason as a consequence of obedience, it does not even make the command less stern by adding the promise, "This do, and thou shalt live." Every step in this process therefore proves that we are free, and not necessary agents.

The conception announces a binding law.

Conscience utters its commands irrespective of consequences.

Next, let us analyse what is given in the kindred affirmation of conscience when it utters the command, It is your duty to do, or to forbear doing, this or that. Observe: it does not say, "It is expedient so to do," or that it is pleasant, or that it will promote your highest happiness, or that obedience will not involve a painful act of

The significance of duty.

We do not
owe duty to
ourselves.

Obligation
must centre
in a Being
who is
external to
ourselves,
who, like
ourselves,
must be a
free agent.

Conclusion.

The
testimony of
legislation.

self-sacrifice ; but irrespective of all such considerations, and despite of all consequences, it says, "It is your duty," *i.e.*, you owe it to do this, or that. To whom then do we owe it? Not to ourselves ; for to owe a duty to ourselves is no real indebtedness, but a figure of speech. To owe a thing to ourselves bears a close resemblance to taking money from one pocket and putting it into another. The obligation, therefore, must centre in a Being who is external to ourselves. But we can owe nothing to a stock, a stone, or any kind of necessary agent ; nor can a necessary agent owe anything to us. It follows, therefore, that both ourselves who owe, and the Being to whom we owe, must be possessed of a moral nature, *i.e.*, that both must be free agents. The idea of duty, therefore, advances a step beyond that of oughtness, and proclaims the existence of a God, who is not a mere force, but a moral being to whom man is ultimately responsible.

Our conclusion therefore is, the idea of duty involves that of obligation ; the idea of obligation, responsibility ; the idea of responsibility, a power of self-determination ; and a power of self-determination, a freedom within certain limits to act or to forbear acting ; for without this freedom obligation, responsibility, and a power of self-determination are inconceivable.

Equally decisive is the testimony given by the whole course of legislation to the universality of

the belief that man is a free agent. All just legislation is based on the assumption of this truth. It looks not merely to the external act, but to the motive of the agent. Did the agent intend to do the act, or was it a mere accident over which he could exert no control? Thus the same result produced with intention may be the foulest of crimes; but if without intention, it is no crime, but a misadventure. Let us take an example: a man is found dead with a fractured skull. If the wound was inflicted with intention, and if the person who inflicted it knew what he was doing, the law pronounces the act murder; but if without intention or knowledge, it is an accident. The same principle is also universally acted on in private life. All men naturally raise a cry of injustice for punishing a man for what he could not help doing, or for what he did in ignorance or without intention; and however injurious the act may be to us personally, as soon as we are convinced that it was unintentional, our anger (which is really a desire to punish a wrong-doer for the wrong which he has inflicted) ceases. So likewise is it with respect to an act of one deranged. We put him under restraint for the purpose of preventing him from doing further mischief, but to punish him would be an outrage. In like manner we act with respect to animals. They are governed simply by impulse, and are incapable of rational

All just legislation is based on the assumption of man's free agency.

Illustration.

The principle acted on in private life.

We do not punish the deranged for their acts.

No one
punishes a
noxious
animal.

A noxious
man is held
responsible.

Free agency
or the
absence of it
constitutes
the differ-
ence.

The
testimony of
the past
experience
of civilized
man sum-
marised.

choice. We therefore refuse to hold them responsible, however mischievous they may be. A noxious animal we kill to save ourselves and others from future danger, but no one thinks of punishing it as a responsible agent. But a noxious man we hold responsible; as such, we attach to him blame, and deem him justly deserving of punishment. What, I ask, is the reason of the different point of view with which we contemplate the same outward result, according as we view it as brought about with, or without, intention? The only possible answer is, the possession or the non-possession of free agency: for intention involves freedom to act or to forbear acting; and without it, it is destitute of meaning.

The testimony of the past experience of civilized man to our free agency may be briefly summarised thus: No freedom, no responsibility; no responsibility, no obligation; no obligation, no sense of duty; no sense of duty, no morality; no morality, no distinction between right and wrong. If one link on this chain fails, all sense of obligation ceases: the idea involved in the conception "I ought" is a delusion; duty is nothing but the necessity of yielding obedience to the strongest, *i.e.*, one whose sole claim to command is the power to punish us for disobedience, and human society becomes a mass of hopeless confusion.

Such are the facts to which the consciousness

and the conscience of civilized man have testified in every age. What, I ask, have necessitarians to set against them? I answer, not a single fact, but a number of theories respecting the origin of the facts, of *a priori* assumptions, which are incapable of verification, and of deductive reasonings founded upon them. But what is the value of such reasonings and assumptions when they come into collision with the primary facts of consciousness? We answer, in the words of a well-known phrase, "So much the worse for the theories and the assumptions." But if we are to accept the positions of necessitarians, civilized man, throughout all the ages of his existence, has been feeding on a delusion; and the fundamental groundwork of his thoughts, and the laws which have regulated his conduct, have been based upon a falsehood. Is this, I ask, credible? What, then, is the course which reason suggests when theories and reasonings such as those above referred to lead to conclusions which contradict the primary intuitions of our consciousness? Surely it is not to doubt the validity of our intuitions, but to question the truth of the assumptions, and the validity of the reasonings. Let us apply this principle to some of the most important of the theories and the reasonings of necessitarians.

Necessitarians have only *a priori* assumptions to set against the facts.

The course suggested by reason in the circumstances.

Necessitarian theories and reasonings.

The chief ground on which they affirm that our consciousness of free agency is a delusion is the

The chief
assumption
of the
necessi-
tarians.

The
inference
drawn.

assumption that nothing exists in the universe but matter and force ; and that these, by their combined action, have evolved¹ every thing which exists, including man and his moral nature. From this the inference is drawn that man must be a necessary agent, because matter and force are necessary agents ; and it is impossible that a thing can evolve out of itself, what was never in itself. The truth of this last position we fully admit ; but as the highest certitudes of consciousness affirm that we are free agents—certitudes than which we have

¹ The term “evolution” as it is ordinarily used both in scientific and popular language, involves a very serious ambiguity. Its real meaning is “a rolling out from.” Consequently, it is only possible to evolve out of a thing, some thing or quality which was originally in it, either in an active or passive state. Accretions, therefore, to a thing, are incorrectly spoken of as evolutions from that thing. But all growth, whether of vegetables or animals, involves an accretion to the original seed, *i.e.*, an introduction into it of something foreign to its nature, which it possesses the power of incorporating into its own substance. Such processes, therefore, are incorrectly designated evolutions. Thus scientific men are in the habit of speaking of one thing being produced out of another by a process which they designate evolution. Thus nothing is more common than the affirmation that man has been evolved out of some lower animal ; and that by a process of this kind everything which has life has been produced during the indefinite ages of the past. But in cases like this, where extreme accuracy of thought is necessary, the expression is misleading ; for even on the principles of the purest materialism, the original germs of life cannot by any possibility have evolved out of themselves all the forms of living things, which have existed in the past, or which exist in the present, except by the aid of a principle wholly different from evolution, *viz.*, that of accretion and assimilation.

no greater certainty—it follows that the theory that man is nothing but the outcome of matter and force must be false. Or to put the same truth in a positive form, man must be the production of a force which is intelligent and free, *i.e.*, a Being must exist, who is distinct from the material universe, who is the author of the intellectual and moral nature of man.

The theory that man is nothing but the outcome of matter and force is false.

The above reply is equally applicable to the reasonings of the Agnostic, who, although not a theoretical, is a moral atheist, *i.e.*, while he admits that the belief in the existence of a first cause of the universe is a necessity of thought, he empties this concession of the smallest moral value by proclaiming that it is impossible to affirm anything respecting the real nature of this cause; that our knowledge is strictly limited to matter, its laws, and necessary forces, and that every thing in man is the outcome of their conjoint action.

The moral atheism of the Agnostic is met by the same reasoning.

Another theory has been propounded in support of the same position, that our various mental phenomena are modes of motion; and inasmuch as all motion is under the dominion of necessary law, that all the phenomena of mind must be necessary also; and consequently free agency can have no real existence.

The theory that our various mental phenomena are modes of motion.

With respect to these theories (for they are theories, and nothing more), I shall only observe that our conception of matter and its phenomena,

Our conception of matter and mind and their phenomena at opposite poles of thought.

Mental functions designated intellectual separated by an impassable gulf from sensations.

and our conception of mind and its phenomena, occupy opposite poles of thought, which no ingenuity of philosophers or scientists has succeeded in bridging over. Although all sensations are the results of motions, yet it is an undoubted fact that no human being has succeeded in translating a motion into a sensation, or even in conceiving the possibility of doing so. In like manner an impassable gulf separates sensations from those mental functions which we designate intellectual ; and one equally wide, separates both motions, sensations, and acts, purely intellectual, from those which we designate moral. Until the one can be translated into the other, and the gulf which separates the one class of conceptions from the other be bridged over, it will be sufficient to say with respect to the positions in question, Not proven ; and we need not trouble ourselves with the plea so often urged by theorists of all kinds, whenever they find themselves in difficulties, that although science has not yet succeeded in bridging over the different gulfs to which I have alluded, it will certainly do so at some period of the future. Our concern, I repeat it, is not with prophecies, nor with tendencies, but with actual present facts. Such facts are the presentations of consciousness above referred to ; and until the above positions are proved to have a more substantial basis on which to rest than hopes, conjectures, and abstract theories, it is absurd

to ask us to believe that we are living on delusions.

Further: some eminent men of science affirm that thought is a function of the brain, and nothing more. Assuming this position to be true, they urge that inasmuch as the brain is nothing but a mass of organized matter, and matter and its motions are subject to necessary laws, whatever results from their combined action, *i.e.*, all the phenomena of mind, must be equally necessary; and consequently free agency has no real existence.

The theory that thought is a function of the brain.

According to it the phenomena of mind are necessary.

But the premises do not justify the conclusion. Assuming all that physiologists affirm to have been proved, what does it amount to? This, and no more: that as we are at present constituted, the brain is the organ of thought, that every thought involves a corresponding movement in the brain; that within the limits of human experience, wherever a brain does not exist, thought is not; and wherever the brain is imperfect, thought is imperfect; and that mind can neither be made visible, weighed, or measured by the most delicate instrument which man has succeeded in inventing. All this may be conceded, yet it by no means proves that mind is a function of the brain, or that it and the brain are identical. All that it really proves is, that in the constitution of things which come under our observation, mind uses the brain as its instrument, and that mind and brain are so in-

The identity of mind and brain not proved.

timately correlated, that the mind cannot act without the brain. But it totally fails to prove that mind has no existence apart from the brain, or that under a different constitution of things it cannot act without one. Still less does it afford the smallest pretext for affirming that the innumerable adaptations with which the universe abounds, and the order which reigns throughout it, do not prove the existence of a mind which is capable of acting apart from all material limitations. This being so, it follows that there is nothing in the discoveries of physiologists respecting the nature and functions of the brain, which invalidates the testimony of consciousness to man's free agency, and his possession of a power of self-determination.

The testimony of consciousness to man's free agency not invalidated by the discoveries of physiologists respecting the nature and functions of the brain.

The last position which requires notice is the affirmation that the atoms, out of which all things have been evolved, contain in themselves the principles of life, intelligence, and freedom; or to state the same idea in the words of a well-known scientist, that matter contains in itself the potency of all things. We are therefore asked to accept as the foundation of a sound philosophy of man the astounding proposition, that a class of atoms exist which are capable of intelligence and self-determination; or else, if as units they are devoid of these powers, they are capable of producing such results when in combination, of which they were utterly destitute when out of combination, *i.e.*, all

The theory that atoms capable of intelligence and self-determination exist.

existing intelligence and morality. This theory is a theory pure and simple; without a single fact on which to rest, for not even the author of it pretends that an atom or a molecule of this kind has ever come within the range of his experience. With respect to it, the common sense of mankind will concur in thinking that atoms and molecules, which possess in themselves intelligence or freedom, or which are capable of evolving out of themselves in combination qualities of which they were utterly destitute when out of combination, must be very singular products of nature. Nay, it is impossible that they can have been such products, for, according to the theories of those against whose principles I am contending, such atoms must have been self-existent; for if they had a beginning, a Being must exist who originated them. This Being therefore, unless he was capable of imparting to them the qualities of freedom and intelligence, while he himself was bound by the iron law of necessity, must have possessed consciousness, free agency, and intelligence; and consequently must be the Author of these qualities as they exist in man. Further, as a free agent is a nobler being than a necessary agent (for to the latter we never assign praise or blame), if man is the production of a necessary agent, that necessary agent has been capable of producing a being greater and nobler than itself. But it will be unnecessary to

No atom or molecule of the kind has ever been discovered.

Such atoms must have been self-existent.

Their Creator must have possessed consciousness, free agency, and intelligence, and be the Author of these qualities in man.

discuss this theory further, for it practically concedes the point for which we are contending, viz., the existence of free agency and a power of self-determination, either in atoms, molecules, or in their results in combination.

The distinction instinctively felt between physical and moral agents proves that man is a free agent.

Once more: the distinction which all men instinctively feel between physical and moral agents, and between physical and moral laws, constitutes an overwhelming proof that man is a free, and not a necessary agent. A physical agent cannot break the law of its being: it acts as it does because it cannot help so acting; it is always trustworthy, it never yields to temptation, it never lies. Thus a piece of iron can only act in the same way, and will only act in the same way for ever under similar circumstances. Its actions, therefore, form an order of phenomena which never varies, which order we designate their law. Moral agents, on the contrary, act in conformity with a law of a wholly different character. Moral law, be it observed, is not the order of events as they actually are in the moral world, but the order of events as they ought to be. It contemplates an ideal, up to which the moral agent ought to act; and its conception involves the idea of an authority which has a right to command. At the back of physical laws there is force, and force only; at the back of moral law is not force, but authority. A physical law can be broken neither by a physical

Differences between physical and moral law.

nor a moral agent; a moral law can be broken by a moral agent. Physical agents can be neither persuaded nor tempted, nothing can divert them from their course but the action of superior force. Moral agents are precisely the reverse. Physical agents cannot impress their will on one another, for they have no will to impress. A moral agent can issue an order which another moral agent will feel it his duty to obey; but to all orders physical agents are deaf. But while no moral agent can violate the law of a physical agent, or induce it to violate its own law, it is capable by an act of its will, within certain limits, of diverting the course which a physical agent would pursue if left to itself, and making it do his pleasure. Thus for example, iron has been made man's obedient servant without once violating the law of its action. A piece of iron left to itself will not float, but man, without either violating or suspending its laws, can make it float; man cannot walk across the ocean, but he can construct an iron vessel which will carry him to the most distant lands, and make this unintelligent machine obedient to his will. Similarly, electricity can neither hear, think, nor speak; if you ask it to convey a message for you, it will be deaf to your most earnest entreaty, yet man can so impress his will upon it as to make it his most faithful servant, and influence the actions of moral agents; and although moral agents when

Differences
between
physical and
moral
agents.

Examples

Physical
agents can
be made
the instru-
ments of
man's will.

The
influence of
will the
most potent
agency in
human
affairs.

separated from one another by thousands of miles cannot produce the smallest effect on one another, yet by using this unintelligent force as the instrument of his pleasure, a man can so affect other moral agents at this remote distance within a few minutes as may kindle a war which may last for years, and sacrifice lives by thousands. Numberless similar instances might be adduced, in which man makes physical agents the instruments of effectuating his will by diverting their forces into a direction different from that which they would pursue if they were left to themselves; nay more, he can even make them the agents of his will and the memorials of his existence long after he has passed from this earthly scene, and even the instruments of handing down to future generations the image of himself: what he thought, and what he did. So far, therefore, is it from being true that the influence of will is inappreciable, as necessitarians affirm, it is not only the most potent of all human agencies in the affairs of man, but it is capable of producing wholly different results in nature from those which its forces would have effected if they had been allowed to pursue their own course unmodified by man. In a word, moral agents have transformed the appearance of the globe, and have made it wholly different from what it would have been if its various physical agents had been left to pursue the course of their own undirected action.

What then do these and innumerable similar facts prove? I answer that man is a free, and not a necessary agent; that he is a self-determining cause of action, and not a machine which only differs from ordinary machines in that he is a machine possessed of life.

The facts prove that man is a self-determining cause of action.

The belief in necessitarianism therefore is founded on theories, assumptions, and abstract reasoning, *versus* facts; the belief in free agency is founded on facts, *versus* theories, assumptions, and abstract reasonings. Necessitarianism is the belief of the speculator only as long as he continues in his study; but the moment he enters the active world, he feels himself compelled to think, talk, and act on the assumption that he is a free agent, and the doctrine that man is a machine is felt to be a practical falsehood. It was said by an eminent Roman that he wondered, when two augurs met each other in the street, that they did not burst out laughing in one another's faces, so ridiculous was their art. We may almost wonder that two necessitarians do not do the same when they meet one another in practical life; but human credulity knows no bottom.

The necessitarian, compelled to think, talk, and act in the world on the assumption that he is a free agent.

But the necessitarian philosophy involves issues of the most profound importance. If it is true, no God exists of whose existence man need take thought, there is no intelligent or moral government of the universe, but all things are directed

Issues of the necessitarian philosophy.

If this
philosophy
be true iron
law prevails
and there is
no future
retribution.

Pessimistic
character
of necessi-
tarianism.

by an iron law of necessity, and by that concurrence of forces modifying one another's action, which in common language is designated chance; and no future existence for man in which the imperfections of the present moral order of things may be remedied hereafter, and the prosperous sinner be called to account for his conduct here. It will doubtless be urged that it is our duty to pursue truth to whatever consequences it may lead, to face them boldly; and not to take refuge in such a delusion as satisfied a thinker of the ancient world who avowed that if man perished at the stroke of death, and the hope of immortality was a delusion, he wished never to be set free from that delusion as long as he lived. But most men will be of opinion that if pessimism is true (and necessitarianism is pessimism), it is useless to talk of the duty of pursuing truth; and that the wisest thing for man is to make the best of his little day, and die; and if delusions can help him to enjoy it, so much the better, for the discovery of necessitarian truth will add to the certainty of suffering and dying, the pain of anticipating it. But we go further, and contend that if necessitarianism thus shakes to their foundation the principles of moral obligation on which society is based (as we are persuaded that it does); if it teaches that this ordered universe is the result of the action of unintelligent forces; that it has no

moral governor, and by consequence no moral order; and that the successful villain, whose astuteness has enabled him throughout life to evade the penalties which society would have inflicted on him, and the suffering and self-sacrificing saint will alike after the stroke of death sleep the sleep of unconsciousness, and be undisturbed by “their works following them;” that consequences such as these form one of the strongest reasons for believing that the theory is untrue. To us, and we think to all men who are not blinded by a theory, it will be simply unbelievable that a universe in which order and adjustments prevail to the degree in which they unquestionably prevail in the physical universe, should be destitute of moral adjustments, a moral order, and a moral force, which is capable of enforcing obedience to moral law, and of punishing transgressors for its violation; for nothing can be more certain than that neither of these can exist, if it will be alike to the evil and the good, after each has passed away from this earthly scene. If this be so, philosophers may preach what they please in defence of virtuous actions; but the overwhelming majority of mankind will draw the conclusion that the best practical rule of life will be to gratify one’s own tastes (be they what they may) while it is possible to do so; and not to decline present gratification in the hope of the enjoyment of

The consequences form the strongest reason for believing the theory to be untrue.

It is unbelievable that such a universe as this should be destitute of moral order.

a greater though distant good, when owing to the uncertainty of life's duration, it is more than doubtful whether they shall live to realize it, and with the certainty that when life is ended, both the good and the bad will alike sleep the sleep of unconsciousness. If averages form a ground on which to base moral action, they prove that the number of those who live to realize their calculations, hopes, and expectations is comparatively small.

The necessitarian foundation of moral obligation is utilitarianism.

It knows nothing of a Creator, of moral law, of human brotherhood, or a voice of conscience.

The ultimate foundation on which the necessitarian philosophy rests moral obligation is the principle of utilitarianism, or that course of action which is fitted to realize the greatest happiness of the individual. It knows nothing of a Creator, to whom is due love and service from the creature; nothing of a moral law, founded on His essential nature, and on man's relationship to Him; nothing of a moral governor, who cares for righteousness, and who is prepared to enforce it; nothing of human brotherhood, founded on man's relation to God, as a common Father; nothing of a voice of conscience, which is capable of speaking authoritatively and saying, This it is your duty to do; from this it is your duty to forbear, despite of all consequences which may happen to yourself; nothing of a future state, in which man shall be rewarded or punished for his conduct here. On the contrary, according to its pronouncements, the consequences

of actions, be they good or be they bad, are confined to this present life; beyond it, the good have nothing to hope, and the bad have nothing to fear. All other foundations of moral obligation it dismisses as no better than old wives' fables.

Utilitarianism, therefore, or the pursuit of our greatest happiness, viewed as a standard of moral obligation, resolves right, *i.e.*, virtuous conduct, into a calculation of consequences. According to this theory, each individual is compelled to pursue that line of conduct which in his opinion will conduce to his greatest happiness, *i.e.*, which will afford him the greatest amount of pleasure. But inasmuch as there is no higher authority to appeal to than the taste of the individual, and the degree of his insight into the future consequences of his actions, opinions may, and do differ widely as to the line of conduct which will realize this result. The utilitarian philosopher affirms that the effort to realize the happiness of others is the one only certain road of realizing the happiness of ourselves. This makes virtuous conduct simply a matter of accurate calculation and good taste; and vicious conduct the reverse. But the overwhelming majority of mankind think very differently; and all that this philosophy can do is to hope for their gradual enlightenment. A small number of select individuals may accept the utilitarian standard, and try to live by it; but there is no reason why

Utilitarianism resolves virtuous conduct into a calculation of consequences.

The utilitarian road to happiness.

Practical
effect of
utilitarian-
ism.

men who are endowed with a less accurate power of calculating the contingencies of the future should not arrive at a different conclusion ; and inasmuch as each individual is responsible to himself alone, and there is no hereafter to be the subject of hope or dread, why a man should not arrive at the conclusion that the most certain way of realizing one's own happiness amid the chances of this uncertain world is to make the best of life's little day by grasping at present gratification, each according to his tastes,—the contemplative man in contemplation ; the elevated man in what he considers great and noble ; the average man in the ordinary pleasures of life ; and the sensualist in sensual indulgence ; or to express the same idea in language borrowed from the Apostle, let us each, according to our respective tastes, “eat and drink ; for to-morrow we die.”

According to
it, it is a
man's
misfortune,
not his sin,
to be bad.

According, therefore, to the principles of this philosophy, for a man to be a bad man is neither his sin, nor his crime, but his misfortune. It is simply, to start with a taste for a particular class of pleasures, and in addition to be a bad calculator of the consequences which will follow from their indulgence. If right conduct is the pursuit of a course of action which a man believes will realize his own greatest happiness, it cannot be denied that the immoral man seeks to realize this, only he mistakes the way of doing it, and is a bad calculator of the means by which it can be realized. His tastes

lead him to desire present gratification without any regard of the source from which it comes; and his powers of calculation are so defective that he is unable to assure himself of the truth of what the utilitarian philosopher affirms, viz., that he will realize his greatest happiness by denying his appetites, instead of gratifying them; or by pursuing what is more elevated, rather than by yielding to his passions. But in good truth, if the only test of virtue is actions which tend to realize our greatest happiness, and if the test of happiness is pleasure, then it is in vain to talk of actions or of pleasures more or less elevated than others, for in that case all can be estimated by one standard only, viz., the amount of pleasure which they yield to the individual. Bad taste, therefore, and a bad power of calculation are the only fault of him whom men have concurred to designate a bad man; or it may be a want of power to pursue what he is convinced in his understanding is a greater, though distant good, at the expense of present gratification, of self-denial, and it may be of present suffering. But all this is his misfortune, and not his sin.

Bad taste and bad power of calculation the only faults of a bad man, according to it.

What, I ask, will be the effect of persuading the masses of mankind that the only distinction between actions as good or bad is their tendency to realize the greatest happiness of the individual, and through the individual of the race; and that the foundations on which moral obligation

Consequences of persuading men to accept the utilitarian standard.

The
testimony of
experience.

The villain
escapes if
astute
enough to
avoid
detection.

have hitherto been supposed to rest, are no better than a quagmire? Past experience proves that to this question there can be only one answer, viz., that each man will consider himself to be entitled to do what he lists, provided he has sufficient astuteness to enable him to avoid the penalties which society would inflict upon him for the breach of its laws, for, according to the principles against which I am contending, the greatest sinner has nothing to fear beyond the grave; and society can only deal with him while he lives. If, therefore, a villain is sufficiently astute to avoid detection (and many villains are thus astute), he need fear no qualms of conscience; all that he has done has been, that he has done as best he could to realize what according to the light which was in him he considered to be his own greatest happiness, and this he has succeeded in accomplishing. The means by which he has effected it are a pure matter of indifference; and when a successful life of crime has come to a termination, this philosophy assures him that his sleep of unconsciousness will be equally undisturbed as that of a Howard or a St. Paul. Truly, if these principles represent the realities of things, the holy, the good, and the self-sacrificing are of all men the most foolish and the most miserable.

But another important consequence follows. Full well it may be asked, if necessitarianism is true, what right has society to inflict penalties

for the violation of its laws? The transgressor of them may justly urge, I have only done what I could not help doing, *i.e.*, I have acted on the most powerful motive, which in my case was the desire of a present gratification, which seemed to me to promise a far greater degree of happiness than by exercising a painful restraint to realize some distant but uncertain good, which owing to the uncertainty of life I may never live to enjoy. I am no philosopher or profound calculator; and whatever such may preach, it seems to me to be wiser to act on the old adage, "A bird in the hand is worth two in the bush." The only answer which society can return is, Strength is right, and right is strength. I have strength, and by the right of strength I deal with every violator of my laws, and with every one who inflicts on me an inconvenience. I deal with transgressors as I deal with noxious animals. Some, if convenient, I restrain; on others I inflict pain; others, if more convenient to me, I kill. My sole object is to free myself from the inconveniences which you occasion; and to effect this I seek to render it less pleasurable to you to violate my laws than to observe them.

The system deprives society of the right to inflict penalties for breach of laws.

It can only deal with them as noxious animals.

But the utilitarian principle of altruism, or that the realization of the greatest happiness of the greatest number will be attended with the realization of the greatest happiness of self is no new discovery. It is neither more nor less than one of

Altruism no new discovery.

Utilitarian-
ism has
divested
Christian
law of all
moral
power.

the old laws of the kingdom of God, but deprived of all the sanctions by which it can be enforced. Yet we are invited to believe that altruism is a great improvement on the now worn-out Christian law. "Thou shalt love the Lord thy God with all thine heart, mind, soul, and strength ;" and, consequent on this, "thou shalt love thy neighbour as thyself ;" and on the new commandment, to love one another as Christ has loved us. All that the utilitarian philosopher has really effected is, to divest these commandments of all moral power, by proclaiming that there is no God whom we need regard, no Christ to love, and no hereafter to fear.

How is
altruism
to be
generated ?

But if this philosophy is the sole foundation on which morality is to be based, I ask, how is this principle of altruism to be generated ? It cannot be generated by invoking the principle of evolution, for it is one of its fundamental principles that primitive man was altogether selfish, and that everything in civilized man which is not so is an after-growth. How, then, can the disinterested love of others be evolved out of a being whose one distinguishing characteristic is pure love of self ? Many are the shifts to which utilitarianism has recourse, such as the family, and the tribal feeling ; but it may be justly asked, whence came these ? How did they originate in a being whose moral constitution, if he had any, was selfishness pure and simple. The truth must be spoken ; unless it is

The shifts
of utili-
tarianism.

possible to evolve out of a thing that which was never in it; if altruism is to be generated in a being, of whom love of self is the one distinguishing moral characteristic, recourse must be had to a power different from evolution; for if evolution goes on evolving for endless ages, selfishness can never generate sacrifice of self. Such a power Christianity affirms that it possesses; but it is this very power which the utilitarian philosophy ignores. What has it to substitute in its place? This, and nothing more, the aphorism, that the pursuit of the happiness of others for its own sake is the most noble of human pursuits. But what right has the utilitarian to talk of the more or less noble in action, when the only distinction between virtuous and vicious actions is their tendency to realize pleasure or pain. Cordially will Christians assent to the truth of altruism, when it is once admitted that there is a God, who is the moral Governor of the universe, and a future state of retribution; but this is the very thing which utilitarianism refuses to admit into its calculations. Yet if the calculation be limited to the results of actions in this life, not only will it be a matter of extreme difficulty accurately to balance the pleasures with which the effort to realize the happiness of others is attended, against those which follow the indulgence of the passions which terminate in self, but the final result will be extremely doubtful,

Christianity possesses the power which utilitarianism ignores.

Christians will accept the truth of altruism when it is admitted that there is a God and a future state of retribution.

and will in no small degree be dependent on the taste of the individual. But this is not all; for even if the balance should be ultimately pronounced to be in favour of acting on the principle of altruism, so intricate would be the calculation, and so doubtful its results, that it would leave it destitute of a moral power sufficient to outweigh those impulses which urge the overwhelming majority of mankind to prefer present gratification to the chance of greater, but more distant good. One thing is certain; not one in a hundred thousand of mankind has been induced to act on this principle during the ages of the past. It may be a beautiful theory as long as the philosopher confines himself to his study; but as soon as he issues into the hard world of fact, it is felt to be powerless to act on the masses of mankind. Philosophers may assure us that if only men will yield themselves to their guidance it will realize a millennium. This we shall not dispute; for it is the fundamental principle of Christianity that mutual love is the highest happiness of man; but under the utilitarian system the difficulty consists in making this "if" a reality, because it renounces the whole of that mighty moral power which Christianity brings to bear on the human heart, and has nothing to substitute for it but the results of an uncertain calculation, which may vary according to the tastes of the individual.

A beautiful theory for the study, but not for the hard world of fact.

It has no substitute for the moral power of Christianity which it rejects.

The utilitarian system of morality, therefore, reduces virtue and vice to a matter of calculation. Its moral, holy, and good man (if such terms have any right to a place in its vocabulary), is nothing but a good calculator of the consequences of actions, and who has sufficient strength of will to act on his calculations, notwithstanding all the solicitations of his passions to the contrary. Its immoral man, on the contrary, is a bad calculator, or one who, if he calculates rightly, is unable to resist the force of temptation. As a system of morality, therefore, it can recognize neither crime nor sin. What in the ordinary language of mankind is designated moral wickedness, in accordance with its principles, is nothing more than the misfortune of *possessing a bad taste, and imperfect power of calculating the consequences of actions*. If a man can see his way, therefore, to avoid the penalties which society would inflict upon him for the violation of its laws, and if the result of his calculation is that he will realize his own greatest happiness by the practice of villainy and fraud, what, I ask, is to hinder him from so doing? All other moral considerations being swept away under the teachings of this philosophy, does not such a successful villain almost realize the standard of utilitarian virtue? or if not virtue, who can blame him? for he has only done what seemed to him to be best fitted to realize his own greatest good.

The good man of utilitarianism is a good calculator of the consequences of actions.

Moral wickedness, according to it, is only the misfortune of having a bad taste, and imperfect power of calculating the consequences of actions.

The successful villain realizes the standard of utilitarian virtue.

What
necessitarian
philosophy
sweeps
away.

Its moral
edifice is
built on
a foundation
of sand.

It is
compelled to
assume the
truth of
that which
it is its
fundamental
principle to
deny.

The position of things, therefore, stands thus. The necessitarian philosophy sweeps away free agency in man, and the power of self-determination ; undermines the foundations on which existing systems of moral obligation are based, and thus destroys every moral power which can be exerted on man for good. Having effected this destruction,—a destruction so great that even some of those who have aided in effecting it have expressed alarm at the immediate consequences with which it may be attended—an attempt has been made to erect a moral edifice on the principles of utilitarianism. But this, as we have proved, is a building erected on the sand, being a system destitute of all moral power to influence the masses of mankind. What, I ask, will they care about the condition of posterity some million years hence, when they have ceased from conscious existence ? for even utilitarians admit that their promised millennium will only be realized at some indefinitely remote period of the future, when the personal consciousness of the generation now living, and of numbers yet to come has been swallowed up in the mighty *To παν*. Yet even in doing this the necessitarian philosophy is compelled to commit an act of suicide, viz., to assume the truth of that which it is its fundamental principle to deny. This it does whenever it affirms that it is a duty to pursue a more distant good, rather than a present gratification ; for

this act involves choice; choice involves freedom; and freedom, before the course of action chosen can become effect, involves an act of volition and self-determination. Man, therefore, on its own showing is a free agent. True it is that man cannot estimate the precise degree of responsibility which attaches to his brother man,—the question is one far too complicated for our finite understandings; but the Judge of all the earth can, for He not only knows all the conditions of the case, but can penetrate to the secrets of the heart; and we may feel confident that He who has implanted the sense of rectitude and justice in our moral nature, will Himself certainly judge in conformity with that which is right and just. “Shall not the Judge of all the earth do right?”

Man is,
on its own
showing,
a free agent.

God only
can
estimate
the degree of
individual
responsi-
bility,
and will do
right.

But, as I have observed above, the boasted altruism of modern anti-Christian philosophy is no new discovery, being neither more nor less than the old commandment, “Thou shalt love thy neighbour as thyself,” divested of the sanctions by which it was enforced. But even the old commandment was “weak through the flesh,” and was incapable of imparting a spiritual power adequate to overcome the evil which exists in man. What, I ask, has altruism done to remedy this defect? The answer must be, All that it has done has been to remove the imperfect supports on which the old commandment rested. As a spiritual power

it is, and ever must be, powerless. But such a power it is the express end and purpose of Christianity to supply. "O wretched man that I am! who shall deliver me out of the body of this death?" has been, and ever must be, the cry both of the Legalist and the Altruist in their strivings to realize the commandment. But Christianity returns the answer, "I thank God through Jesus Christ our Lord. . . . The law of the spirit of life in Christ Jesus made me free from the law of sin and death. For what the law could not do, in that it was weak through the flesh, God, sending His own Son in the likeness of sinful flesh, and as an offering for sin, condemned sin in the flesh: that the ordinance of the law might be fulfilled in us, who walk not after the flesh, but after the Spirit."¹

¹ Rom. vii. 24, 25; viii. 2-4. (Revised Version.)



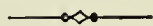
THE WITNESS
OF
MAN'S MORAL NATURE
TO
CHRISTIANITY.

BY THE
REV. J. RADFORD THOMSON, M.A.
(Professor of Moral Philosophy in New College, and in Hackney College, London.)



THE RELIGIOUS TRACT SOCIETY;
56, PATERNOSTER ROW; 65, ST. PAUL'S CHURCHYARD; AND
164, PICCADILLY.

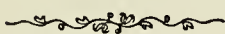
Argument of the Tract.



THE existence of the moral nature of man, and the existence of Christianity as a religion whose doctrines are recorded in certain documents, and which is historical in its origin, and potent in its influence, are assumed. The most important facts of man's moral nature and life are set forth, and their correspondence is shown with the leading revelations of Christianity, with what Christianity teaches of the character and government of God, the unique character and ministry of Christ, and with the moral teaching of Christianity.

Conscience accords with Christianity. Man's aspirations after perfection are met by it. The redemption it provides is adapted to man's sinful state. Man's moral nature recognizes the beneficial influence of Christianity on society. Conscience responds to the Christian doctrine of retribution. The Christian doctrine of immortality satisfies man's moral nature.

THE WITNESS OF MAN'S MORAL NATURE TO CHRISTIANITY.



THE religion of Christ lays claim to authority so high and special, that it cannot be a matter of surprise that its claims are constantly being questioned.

In a sense, Christianity is always on its trial; and happily the witnesses are many upon whom Christianity may call to give evidence on its behalf.

Christianity
can call
many
witnesses
in its
favour.

Recognizing the value of them all, we propose to examine one of these witnesses with care, thoroughness, and patience.

MAN'S MORAL NATURE AND LIFE may be found, upon attentive inquiry, to yield evidence the most important and material of all. For, be it observed, Christianity is not simply a body of truth; it is a practical law, a revealed principle, motive, and aim of life. And man is not simply an animal, not even simply an intellectual agent; he is a moral being, with perceptions of right, a con-

Of which
man's moral
nature is
one of the
most
important.

sciousness of duty, a power of choice, a nature essentially responsible, with spiritual affinities and immortal hopes. If the evidence furnished by the special nature of man with regard to the claims of Christianity can be fairly taken, that evidence will certainly be relevant, and our conviction is that it will be found to support those claims in a manner both effective and conclusive.

I.

THE NATURE OF THE ARGUMENT.

EVERY argument proceeds upon a certain basis of admitted fact; as, for example, the principles of reasoning native to the mind, and the phenomena which actually exist, whether in outward nature, in the mind, or in human society. We here make two assumptions. First, we assume *the facts of man's moral nature* as they are, and can be shown to be. Secondly, we assume *the existence of Christianity* as a religion whose doctrines are recorded in certain well-known documents, and as a religion having a historical origin and wielding an undeniable force in human society.

We assume,
1. The facts
of our moral
nature and
life; and
2. The
existence of
Christianity
as proved in
its special
documents
and in
general
history.

Who are
addressed in
the Tract.

Addressing ourselves to those who do not deny the facts or disparage the dignity, or even discredit the authority of man's moral nature, we aim at showing them that their acknowledgment

of man's moral nature, and their reverence for the moral law, should in all justice lead them to admit the authority of the Christian religion. The acceptance of the one may be shown logically to involve the acceptance of the other.

For dogmatic atheists, this line of reasoning has neither validity nor interest. If there be no God, it is useless to endeavour to prove that Christianity has a Divine origin. But it may cast some light upon that great Unknown, in which many minds find, or rather fail to find, the Unknowable. And for deists and sceptics this line of thought has a profound significance, leading them whither many would fain be led, if only they could lay their hand upon the clue.

The harmony between man's nature and the Christian religion, becomes apparent upon examination, and favours the belief that Christianity has been provided for and adapted to man's nature by Divine wisdom.

The argument is one from obvious adaptation, and from certain correspondence.

Look at the works of human art. Here is a lock, with many wards and curious intricacies; and here is a key, unlike other keys, and with singular peculiarities. Experience shows that there is a correspondence between the lock and the key, for the one exactly fits and easily opens the other. They are the workmanship of the same skilful artificer, and are made, under the direction of the same intelligent design, each for the other. The key fits the lock; the lock, so to speak, explains, accounts satisfactorily for, the key.

Look at one of the works of Nature,—as we

Illustrations
of adapta-
tions in the
physical
realm.

should say, of Divine creative power. Take some part of man's bodily constitution. Here is the eye, a marvel of optical mechanism. And here is light, an ethereal undulation, entering the eye, affecting the optic nerve, and awakening the sensation of sight. We say, the eye is adapted to the light; light is adapted to the eye; neither can be understood or explained without the other. The theist recognizes in these the designed and corresponding products of the wisdom and the power of the same Divine Optician and Mechanician.

The rejection of design, of purpose, is irrational and unphilosophical. The repudiation of conscious purpose, and of voluntary effort to attain purpose, in the human sphere, is the extinction of philosophy, and is an insult to consciousness. If mind have indeed presided over the creation or development of the Universe, it would be absurd to exclude such adaptations as are everywhere apparent in nature from the province of that mind's foresight and control.

If there are traces of design in the constitution of man's moral nature; if he may justly be said to have been made so as to distinguish between right and wrong, to approve of virtue, to aspire to progress and perfection in all good, to find a law and motive to the better life in a super-sensible sphere; if man's nature is distinctively religious, having reference to a Divine Ruler and Lord: if this be so, what

follows? This follows: that, if Christianity be the revelation of the mind and heart of the Supremé, *we may expect to find a correspondence between the two*; they may be expected jointly to disclose the intentions of their common Author, and will find, each in the other, its proper complement.

Applicability of this argument to the moral and spiritual realm.

It is not urged that this correspondence demonstrates the authority of Christianity. The case is not one for demonstration, which belongs to another sphere. But it is claimed that there is a *high degree of probability* that the Author of nature and of man, who is consequently the Author of what is most distinctively human,—man's moral nature,—is also the Author of Christianity, as a religion adapted alike to man's deepest needs and loftiest aspirations.

The witness before us has this advantage over some others: it speaks a language all can understand. Every reflecting man who desires to know what is true, to love what is good, to do what is right, hears, from the recesses of his own breast, and in his own familiar language, the evidence in question. The reader has not to ask, What is the dictum of the scientist, or the philosopher, or the scholar? but, What is the deliverance of my own conscience, my own heart, my own daily experience and observation? "The Word is nigh thee; even in thy mouth, and in thy heart."

The argument does not require in order to its appreciation any special knowledge; it addresses itself to all readers.

Romans x. 8.

This remark, of course, presumes, on the part of

the inquirer, not only attention to his own nature, but also a candid consideration of the real claims of the Christian religion. Let it be clearly understood that it is not of Christianity as embodied, with more or less of justice and completeness, in the life of its professors, that we speak; far less is it of any actual historic church; for both professing Christians and "visible churches" have too often utterly misrepresented the religion they have claimed to represent to the world. We speak of Christianity as constituted by its authoritative Founder.

This appeal to man's moral constitution as in harmony with the religion of Christ constitutes an argument both reasonable and valid, and one the force of which all men are capable of feeling.

The appeal to man's moral nature is one which reason justifies.

It would be a mistake to suppose that an appeal to the moral nature of man is an appeal to evidence opposed to reason, or independent of reason. If we were to try to show, from a careful inquiry into man's bodily constitution, that he is adapted to a life of labour and temperance, and if we were able to point out several respects in which such a life contributes to exercise and develop the muscles, to promote digestion, to sustain the physical constitution in health and vigour, to promote comfort, and on the whole to increase the amount of pleasure; the exhibition of such a correspondence would be a reasonable and conclusive method of argument. Similarly, to aim at showing that man is, as a

moral being, adapted to a religious—a Christian—life: this is not to forsake reason, and to take refuge in sentimentality. It is to reason legitimately upon plain and unquestionable facts, according to the natural principles of the intellect with which we are endowed, and upon methods which we constantly and justly employ.

II.

WHAT ARE THE FACTS OF MAN'S MORAL NATURE
AND LIFE WHICH ARE OF HIGHEST INTEREST
AND VALUE?

THAT man is a moral being, who can be so shameless as to deny? Philosophy did not wait for the advent of Christianity, before she proclaimed the dignity of man to lie in his capacity for duty, his voluntary subjection to a law of righteousness. On these topics, the glorious thinkers of ancient Greece, Plato and Aristotle, have said things as grand as literature records. It needs not that one be a Christian, it is enough that one be a man, in order to appreciate and to insist upon the supreme excellence of morality as the crown of human nature and life.

The admission that man is a moral being.

Are we like cattle, that we need but to be fed and housed, left to live our little term, and die? Are we only raised above the brutes by a more

developed intelligence, by a higher power of adapting means to ends, by a faculty of foresight, by the gift or acquirement of articulate speech? Might we not possess all these, and yet be less than men? What is it that gives to a human being dignity in his own view, and interest in the view of his fellows? It is the possession of a moral nature and life, which distinguishes man from the brutes, which is his chief characteristic, his noblest prerogative.

Moral
capacity and
faculty the
chief
prerogative
of man.

Show me a fellow-creature who suffers every disadvantage incident to the state of humanity. Let him be crippled in his limbs, feeble in his frame, poor in circumstances. Let his calling be mean and sordid, and let there be in his appearance and his station nothing to excite the vulgar admiration or even attention. Let him be of neglected education, untrained and undeveloped powers. Still, you show me a *man*; and, because he is a man I honour him. Poor, feeble, ignorant though he be, he is capable of much that is purest, gentlest, bravest, noblest, best in humanity. He can be a dutiful son, a faithful husband, a kind and self-denying father, a loyal subject, and a generous friend. He can love; he can shed the tear of sympathy; he can bear his daily burden of labour and care with cheerfulness. He can toil through patient years for wife and child; he can reach to a sinking brother the hand of willing help. He

can brave the scorn of the bigot and the insult of the fool, and can hold to his own convictions through misunderstanding and persecution. He can worship his Maker, and can trust his Saviour. And, when the time comes for him to die, he can, not with brutish indifference, but with tranquil confidence, lie down, and give up his soul into the hands of Him who gave it.

The being, of whom all this and more than this is true, is a being possessed of a moral nature. He has a clear view of the right, and the power to admire, to choose, and to perform it. He has a conscience to which he may be loyal. He can frame to himself some notion of a God, and can recognize the presence and the voice of the Divine Father. He can even deliberately order his life by reference to a standard of good which he has not realized, and with a view to an eternity which only faith can see.

There is a sense in which our opponents admit the moral nature of man. No one denies that man has capacity for action; and it is maintained by some that he is always driven to act by a desire to obtain pleasure and avoid pain. But this does not represent, and obviously does not exhaust, the facts of the case. Human nature and life involve something more than the balance between bodily functions and external nature, accompanied by consciousness, and especially by joy and suffering.

A full and fair statement of the facts demanded

The
prominent
facts of
morality.

Not here attempting to explain the undoubted connection between the physical and the mental, and simply rejecting as unphilosophical the dogmatic assertion of the subserviency of the latter to the former, we would lay down certain facts.

Moral
freedom.

Liberty, though, on purely dogmatic and irrelevant grounds, questioned by some students of physical science, is so evident a fact of human nature that men act upon its reality in reference both to themselves and to others. It is the highest prerogative of the spirit that it possesses true freedom and self-government.

Responsi-
bility.

Responsibility is a consequence of freedom, and means something more than a mere mechanical subjection to punishment inflicted by fatal laws upon those who break them. Every effort to reduce man to the position of a wheel in the vast mechanism of nature, moving as he is moved, rouses the protest of dishonoured and outraged humanity. Man chooses between a lower and a higher principle of action, assured that his own moral elevation or deterioration is involved in the choice he makes.

Conscience
and moral
obligation
or duty.

Conscience and *Duty* are inseparable and correlative. What man *ought* to do, the voice within approves and enjoins with a moral imperative. Theories of conscience differ, but the great cardinal fact of conscience remains unassailable. The com-

mand of *duty* within responds to the standard of *right* without us.

The *Moral Law* is something quite different from that uniformity of sequence which is denominated law (by a usage of adaptation) among the cultivators of physical science. It has also important points of difference from those social and political regulations which, as one source, supply us with the conception. It is independent of man's judgment and feeling; yet its excellence and authority may be intuitively perceived. Whether obeyed or violated, it asserts its rightful pre-eminence, and deigns not to lower its lofty claims, however they may be defied or resented by the rebellious.

The law of right.

Such are the great primary facts of man's moral nature: liberty of choice between higher and lower ends and motives, an inner conviction of responsibility for the choice resolved upon, an intelligent apprehension of the law of rectitude, a consciousness of obligation to obey that high and sacred and imperative command; a nature which can upbraid for sin, and which can aspire to goodness.

The primary facts of man's moral nature summed up.

The possession of a moral nature, the subjection to a moral law, must be regarded as man's distinguishing characteristic, his noblest endowment. It is not a man's property; it is not his capacity for enjoyment; it is not even his power of knowing and subduing nature, which constitutes man's chief interest and real dignity.

A moral nature man's distinguishing characteristic.

The all-
importance
of character.

It is his *character*, by which we understand the principles which he voluntarily accepts, and deliberately embodies in his conduct; the moral tone and temper of his life; the moral influence he exercises over his fellow-men. It is these, in a word, which give true humanity to man.

Society ac-
knowledges
the supreme
importance
of morality.

These truths are not merely asserted by ethical philosophers and theologians: they are *recognized in human society*. Mutual confidence is at the foundation of social and civil relationships. Justice is required, and benevolence is praised, in all civilized societies. Virtue, disinterestedness, and unselfishness are held in esteem, even by those who do not themselves possess such qualities, and whether they profess to esteem them or not. The regulations of society embody some portions of the moral law, and rely upon some of the moral sanctions.

Parts of
morality
embodied in
legislation.

So important is morality deemed in human communities, that it is in part elaborated in jurisprudence and embodied in legislation. The governments of earth, the laws of nations, the magistracies by which law is administered, and the penalties by which it is enforced,—all are witnesses to the exalted position which the conduct of men, and the springs and motives and aims of conduct, hold in the estimation of mankind.

To complete, for our purpose, this review of man's moral nature, we must advert to a distinction

of great importance, which is in theory often overlooked, though practically too obvious for concealment. Human nature may be regarded, either as in its possible excellence, or in its actual defects. Scientifically, we may distinguish between the *normal* and *abnormal* state of man. We do not need the Scriptures or the witness of religious teachers to convince us of the reality of this distinction. What man's nature is ideally, is one thing; what it is actually, is another. We do not find this distinction elsewhere; and its existence here implies the speciality of the moral nature and life of man.

Apart even from theology, man's nature must be regarded in 1. Its normal, and 2. Its abnormal state.

Man, as we know him, is in an *abnormal* condition. There are those who would not agree to this statement, who would say: Man is as nature made him; but is in the way to be something better, which also nature will make him in good time. At all events, this must be granted as true of men, that they are not generally what they ought to be, and may be, and perhaps will be. There is a schism between the ideal and the actual. Moral evil, what theologians call *sin*, is a great and fearful fact.

Man is constituted for holiness; yet has fallen into a state of sin.

This significant duality may, at first sight, seem to render it a very difficult task to take the evidence of man's moral nature. On the one side we have man's highest intuitions of what is good and morally beautiful. On the other side we have

The evidence of his moral nature and state is accordingly twofold, and is all the more convincingly in favour of Christianity.

man's evil tendencies and habits. If we say man's nature is noble, admirable, sublime, the loftiest of the Creator's works, we speak the mere and undeniable truth. If we say man's nature is corrupt and depraved, who can dispute the assertion? In the one case, we use the term "nature" of the ideal, and perhaps attainable state of man, as that which is most excellent, and most imbued with and most illustrating the Divine. In the other case we use "nature" to designate the actual, the general state in which men are found to be living, wherever they exist.

Does this twofold and (as it may seem at the first view) all but contradictory view of man's moral state, render it an impossibility to elicit a coherent testimony, whether for or against Christianity? Our contention is that this fact, which seems to present a difficulty, does in reality impart to the witness in question a convincing and conclusive power.

III.

IT REMAINS TO EXHIBIT IN SEVERAL PARTICULARS OF ADMITTED IMPORTANCE AND SIGNIFICANCE, THE CORRESPONDENCE BETWEEN MAN'S MORAL NATURE AND LIFE ON THE ONE HAND, AND THE LEADING REVELATIONS OF CHRISTIANITY ON THE OTHER.

IN this endeavour the twofold aspect of man's moral nature and condition must be kept in sight. Is it the fact that human nature is excellent, admirable, transcending all earthly things in dignity and value? Has man a power—whether by creation, inheritance, or acquisition,—a power of appreciating and perhaps realizing all moral beauty? Then it must be shown that Christianity offers to him the ideal, the very source of all goodness, in the God whom it reveals; and the realization, the model, the motive of all goodness, in the Saviour whom it alone presents to man. Is it also the fact that man's nature is a fallen nature, or (if this representation be objected to) a very imperfect nature, prone to come short of the high ideal, which nevertheless is native and proper to it, and apt to take the lower level and to seek the lower end? Then it must be shown that Christianity comes to Him recognizing this fact, and prepared to deal with it, not by palliating or overlooking the

Christianity both realizes man's highest ideal of moral goodness, and provides a salvation from his debased condition.

mischief, but by convincing men of sin, by securing to them Divine forgiveness, by extending to them the Divine remedy of compassion and mercy, by providing for them the means to a new and holy life.

1

MAN'S MORAL NATURE AGREES WITH THE WITNESS
OF CHRISTIANITY TO THE CHARACTER AND
GOVERNMENT OF GOD.

Our moral
nature
renders us
capable of
apprehend-
ing the
moral
attributes of
God.

Some philosophers, as Sir William Hamilton, have gone too far in affirming that nature has no convincing testimony to give to its Creator and Lord, that nature conceals God, and that only our moral constitution gives evidence of a spiritual Maker and Ruler. Still it seems just to say that our moral nature is the one leading interpreter of the great facts of the Divine government. Especially is this the case with the moral attributes displayed in the Divine treatment of humanity. The very ideas of righteousness, mercy, long-suffering, retribution, are ideas which we do indeed apply to our conception of God, but which we derive from our own constitution, our own relations, and from those varied experiences which our constitution underlies, which our relations develop. We can conceive of intelligent but non-moral beings, who might perceive the traces of power,

wisdom, and foresight, as these exist in the material world. But it is only a moral nature that can admire, revere, adore; that can cherish gratitude, faith, and love. Intellect might apprehend something of a mighty Artificer, but only a moral being can recognize a just and merciful Ruler, a tender and benevolent Father.

Only a moral nature can revere and love.

Just such a Deity as the Scriptures reveal, as the Lord Christ most clearly and fully manifests, just such a Deity our nature is constructed to acknowledge as corresponding to itself. In virtue of our moral constitution, we appreciate moral excellence and beauty, and we are capable of adoring a Being, who in virtue of possessing moral attributes in perfection, deserves and commands our faith, homage, and worship. The eternal Supreme, revealed in the Bible, and manifested in Jesus Christ, realizes all our conceptions of moral perfection; nay, He actually exalts and purifies those conceptions themselves. This indeed, if what has been said is justifiable, is only what might have been expected. He who framed the soul-harp as His own choicest workmanship, He, and He alone, can sweep all its strings, and can call forth all its celestial melody.

All our conceptions of moral perfection realized in the God revealed in the Bible and manifested in Christ.

Our constitution is such that we recognize and revere moral authority,—moral, as distinguished from the authority of mere force. In this, however the origin of such a constitution be accounted

Our constitution recognizes moral authority.

The soul
finds full
satisfaction
in the
Christian
revelation
of the
Supreme.

for, we are above the most sagacious of the brutes. Justice and equity, loyalty and unfaithfulness, merit and ill-desert, mercy and forgiveness, reward and punishment, all these are ideas familiar in human society, and are necessary, not only to its order and welfare, but even to its existence. And as our moral qualities suggest the Divine attributes, so our moral and social relationships, and the ideas to which they give rise, suggest the character and principles of the Divine government. The fact is, that when revelation makes known the kingdom of God, the mind and heart of man find in that kingdom a perfect satisfaction. The principles and methods of that government, the more they are understood, the more do they commend themselves to our nature. The voice within answers to the voice without. As the rocks upon a river's bank send back in echo the roar of the cannon or the music of the horn, so does the Divinely fashioned heart of man yield an immediate and exact response, alike to the thunders of Sinai's law, and to the still small voice that reaches us from the sacred hills of Galilee, or from the sorrowful garden of Gethsemane.

2.

MAN'S MORAL NATURE WITNESSES TO THE UNIQUE
CHARACTER AND MINISTRY OF CHRIST.

History witnesses to the facts of the Saviour's life; but the heart witnesses to the Saviour Himself.

An impersonal God is an abstraction, to which little interest can attach, and from which no help can come. If God be defined as "the Power, not ourselves, which makes for righteousness," the question forces itself, Is such a Power conceivable which is not the power of a living, conscious, intelligent Being? Is moral power—and that which makes for righteousness must surely be moral—conceivable, apart from a nature distinguished by moral qualities, in which nature, the moral power, must reside? The recognition of a moral rule involves the being of a living and personal God.

The
personality
of God
involved in
moral
authority
and rule.

Now, Christianity is *the* religion which makes known a personal Deity, and thus contradicts at once the polytheism of the Gentiles and the pantheism of the philosophers. And how does it render this service to humanity? By revealing to us, in and by Jesus Christ, the living God, who is "the Saviour of all men, specially of them that believe." The personality of the Eternal was indeed revealed to the Hebrews, but it was in Jesus of

Nazareth that the Divine nature was brought near to man. "The Word became flesh, and dwelt among us, and we beheld His glory, as of the only-begotten of the Father, full of grace and truth."

God revealed by Christ. So far as oral teaching extends, perhaps more of God was taught by Jesus in two utterances than has been taught in all words beside. When He had said, "God is a Spirit," and had taught His disciples to say, "Our Father, which art in heaven," He had revealed more than volumes of philosophy could have unfolded.

And in Christ. But it was *in Himself* that the chief revelation was conveyed to mankind. "He that hath seen Me," said Christ, "hath seen the Father." Through the Incarnation Christianity conveys the knowledge of the Father. No longer was God distant, hard to apprehend and to realize. From that time onward the most elevated human notion of the Supreme and Eternal has been derived from the Son, who made known the Father. The human heart had long cried aloud for the Creator, the Ruler, the Father; and now the response came, not in words, but in the person and ministry, the character and influence, the sufferings and sacrifice, the triumph and glory of the Christ. The human heart received and welcomed the response, and has never ceased to welcome it with gratitude and with joy. "This is our God; we have waited for Him!" The attributes which the soul most admires and

honours it sees vital and active in the life of Immanuel. The righteousness and holiness, the benevolence and pity, which are embodied in the earthly ministry of Jesus, perfectly correspond with the intuitions of the moral nature. It cannot be denied that the moral nature recognizes in Christ the realization of its ideal of moral perfection. Who does not feel that it would be an absurdity to put forward any other being as the incarnation of absolute moral excellence? We should shrink, as from a madman, from any fellow-man who claimed for himself a sinless nature and a perfect virtue. But He, who asserted Himself to be the Son of God, was above all detraction, and is entitled, by the suffrages of mankind, to the designation: "the Holy One and the Just." "Which of you," said He, "convinceth Me of sin?" "Why callest thou Me good?" was His question addressed to an admiring inquirer: "there is none good save God," which was a virtual claim to be "equal with God." Witnesses at His trial could substantiate no charge against Him; His judge found no fault in Him; the officer who superintended His crucifixion averred, "Certainly this was a righteous man!" and the dying malefactor justly testified, "This man hath done nothing amiss." Thus the unprejudiced observers of His life acknowledged His peerless holiness, and even prejudice itself was dumb before the moral dignity of the Son of Man.

The ethical perfection and peerless beauty of the character of Jesus.

John viii. 46.

Matthew xix. 7.

Luke xxiii. 47.

Luke xxiii. 41.

The
testimony of
the heart of
humanity to
the Divine
Saviour.

The judgment of contemporaries did but anticipate the judgment of coming generations. Men may not always be the best judges of what is true or of what is wise; but the common voice hails the goodness of the good, and the greatness of the great. The moral nature of man is the same throughout the ages; and there is no mistaking its verdict upon the claims of Christ. The moral judgment renders belief to His words, consent to His claims, veneration to His character.

There was, and is, but one solution to the problem presented by the unique phenomenon. Christ is the Son of the Father, who came from God, and went to God. A solution this, which not the white light of reason only, but the warm glow of pure and sympathetic feeling, reveals as conclusive and satisfactory. A solution this, in which the universal conscience finds repose. A solution this, in which the wisest and the best of men have acquiesced, and which has rejoiced the hearts of untold myriads of needy, sinful, yearning, and aspiring beings.

3.

MAN'S MORAL NATURE ATTESTS THE EXCELLENCE
OF THE ETHICAL PRINCIPLES AND THE ETHICAL
CODE OF CHRISTIANITY.

In the ancient Paganism, religion and morality were independent of each other; religion consisted of a routine of observances conducted largely by a priesthood,—and morality, when scientific, based itself upon philosophy. In the Hebrew system there was a combination of doctrinal beliefs with ethical commands; and every reader of the Old Testament is aware that conduct is very largely the province which religious law-givers and prophets sought to conquer and to hold for God, the righteous King. The Christian Scriptures stand pre-eminent in their insistence upon morality as the “fruit” of religion. And what a morality it is! Even unbelievers have exhausted the resources of language in their efforts to extol its purity, its adaptation, its spiritual power. Two peculiarities are here especially deserving of notice. (1.) *The unsectarian, catholic nature of Christian ethics.* Other systems have their favourite virtues, their distinctive aspect of the moral life of man. Now, looking for the moment only at morality as concerned with man's relation to his fellow-man, it may be asserted that

Revealed religion differs from heathen religions in being ethical.

The New Testament code of morals is comprehensive and complete.

the Christian code is faultless and complete, though not, of course, in the view of scientific jurisprudence, systematic. Let any one who doubts this read the fifth chapter of Matthew's Gospel and the twelfth chapter of the Epistle to the Romans. It cannot but be observed that, whilst the sterner virtues of justice, fortitude, and chastity, are stringently enjoined, a special stress has been laid upon what may be termed the gentler and softer virtues of compassion and benevolence, which have generally been regarded as distinctively Christian. There is not a human one-sidedness, but rather a Divine comprehensiveness and completeness in the ethical code of the New Testament. (2.) Attention should also be paid to another prominent feature of Christian morality: *the insistence upon the subjection to the perfect law of holiness and charity of the very thoughts and desires of the heart.* This is a philosophical principle; but it is philosophy made practical and popular. It recognizes that the spiritual nature is the source of the good and evil which display themselves in the actions of the life. Out of the heart—such is the teaching of the Prophet of Nazareth—out of the heart proceed the actual vices and the actual virtues of mankind. As pure streams from a fountain undefiled, so the moral excellences that promote the welfare of society flow from a heart cleansed by the Spirit and warm with the love of God.

It is also spiritual, dealing not only with actions, but with thoughts and desires.

Now, however philosophers in their exalted moods may have recognized the necessity of a spiritual lustration, it is certain that Christianity alone has made the belief of the need of inward purification and holiness the common possession of man. Judaism did partially for one nation what in this matter Christianity is doing for the race. No religion is so resolutely opposed as is ours to the substitution of the formal and ceremonial,—or even of outward rectitude of conduct,—for the real purity and charity of the spiritual centre of our being.

In reply to this it is said on the one hand, that this very spirituality is opposed to human nature, and that therefore instead of a harmony we have a discord, and that thus our argument is shown to be invalid. No doubt Christian morality is alien from the inclinations of those who are living a life of unrestrained passion and self-indulgence. Yet even their conscience takes part with religion against their impulses and habits. Account for it as we may, there is that in the breast of the man who will allow himself to reflect, who will give time for the inner voice to speak, there is that which witnesses to the excellence and beauty of the moral law. Our nature bows down before the highest expression of moral authority; awed and wondering reverence greets the Divine Presence. Even amongst those whom Christianity

Passion may oppose, but conscience must approve the demands of Christian morality.

Ovid.

would designate "the unregenerate," there are those whose candour constrains them to the famous confession of the Roman poet: "I see and approve the better things, whilst I follow those which are worse!"

Another objection assails our argument from the contrary side. We are told that the morality of Christianity is indeed lofty, but yet is the outgrowth of the ethical sentiments in human nature; that as every quality has appeared in its perfection in some human beings, so goodness was pre-eminently represented in Jesus, and was painted in colours of especial attractiveness by Him, and by those of His immediate school who drank most fully into His spirit; that there are not two terms to be considered and harmonized, morality and Christianity, for the religion is but the loftiest embodiment of man's moral nature, the flower developed by the vigorous moral life of humanity.

Christianity
and its
standard of
goodness,
came not
from man,
but to man,
from God.

But the fact is, that the ethics of Christianity did not come *from* man but *to* man, that the Lord Jesus professed a Divine authority for His revelations, and that, after all, what gives Christian morality its true power is its actual embodiment in Christ Himself, and the special motive to aspiration and obedience which He furnished in His voluntary devotion to the cross for the salvation of mankind.

To appreciate the argument, the reader must

bear in mind what has been said regarding the two aspects of human nature. Man's moral constitution in its *normal* state involves reverence for a law of right, a law independent, spiritual, all-embracing, and of impalpable and invisible, yet supreme authority and sanction. The attempts which have been made to substitute pleasure for right, as the ultimate law of human conduct, have either failed by their destruction of morality altogether, or have really abdicated in favour of a principle disinterested and dignified. The reader of contemporary philosophy will appreciate this remark by recalling the progress from Jeremy Bentham's system to Mr. J. S. Mill's *Utilitarianism*, and from this to the theories of Mr. Herbert Spencer in the *Data of Ethics*. It must be acknowledged that we are amenable to law, and to a law higher than any originating in human society, and that we are so constituted that we feel this to be the case.

Systems of morality based on pleasure cannot satisfy man's moral nature; whilst the system revealed in the New Testament can, and does.

Both sides of human nature bear witness to the morality of the New Testament. Our sinful inclinations and habits are evidence that ethics so lofty did not originate with man, but came from a higher and independent source. And our moral intuitions admit and admire the justice of claims so lofty, and the beauty of an ideal so Divine.

4.

THE HUMAN CONSCIENCE, OR IMPERATIVE OF
MORAL OBLIGATION, IS IN ACCORD WITH THE
RELIGION OF CHRIST.

The con-
sciousness of
duty is
ineffaceable.

There is within man a deep-seated consciousness of *duty*. When, combined with erroneous beliefs and with groundless prejudices, this faculty may and does lead to perseverance in wrong-doing; but in itself it is a noble attribute of humanity. Endeavours have been made to do away with the great facts of duty and conscience, to resolve them into such principles as interest,—or the dread of suffering,—or the associations of early training,—or the gregarious impulse which leads men to flock upon the same tracks. But these efforts cannot be said to have succeeded, notwithstanding the dogmatism of the great modern utilitarian who averred that the word “ought” was a word that “ought” to be banished from language! Bentham was indeed a witness against his own theory; for he taught that “every pleasure is a *primâ facie* good, and ‘*ought*’ to be pursued.”

Apart from questions as to the genesis of conscience, the paramount claims of duty are admitted, although there may be differences of opinion as to the sphere within which it works. Virtuous and lofty minds agree in acknowledging both the com-

manding imperative, and the awful beauty of moral obligation. Who can do other than sympathize with the invocation of our philosophic poet :

“Stern Lawgiver ! yet thou dost wear
The Godhead’s most benignant grace ;
Nor know we anything so fair
As is the smile upon thy face ;
Flowers laugh before thee on their beds,
And fragrance in thy footing treads ;
Thou dost preserve the stars from wrong,
And the most ancient heavens, through thee are fresh
and strong.”

Words-
worth’s Ode
to Duty.

Now let us ask, What is the relation between the consciousness of obligation within, and Christianity? The question almost answers itself. Conscience is assumed, is appealed to, in every book of Scripture. There are nowhere to be found appeals to man’s sense of duty which for power and pungency can rival those of Holy Writ. In the discourses of our Lord, and in the treatises of His apostles, the highest honour is put upon our moral nature, for it is addressed and challenged, its sanction is invoked with confidence. No doubt, Christian ministers and churches have often sought to work upon men’s base fears, and selfish interests, and superstitious tendencies. Our religion does indeed warn men of the fatal consequences of unbelief and disobedience ; and, on the other hand, it seeks to allure men by the appropriate and powerful motive which impels us to seek our true happiness.

Christianity
addresses its
appeals to
all parts of
man’s
nature.

But its
highest,
favourite,
and most
effective
appeal is to
conscience.

2 Corinthians
iv. 2.

Seneca.

Yet the Scriptures are remarkable for their habit of appealing to the very highest principles. There is a verse in St. Paul's Second Epistle to the Corinthians which confirms, in a very striking way, the assertion just made: "By manifestation of the truth commending ourselves to every man's conscience (literally, to every conscience of men) in the sight of God." This is quite in harmony with all Christian appeal. Not to sense, or carnal, worldly interest; not to superstitious terror; not to desire for human applause,—but to the moral nature, the conscience, the responsive confession of the enlightened, but not unbiassed soul,—the voice which we hold to be from heaven addresses itself. We submit that the accord between the summons and the response is evidence that the same wisdom appointed both, and made the one for the other. A heathen moralist felt this, when he wrote: "*Sacer intra nos spiritus sedet, bonorum malorum que nostrorum observator et custos.*" (There has its seat within us a holy spirit, the watcher and guardian of what in us is good and evil.) With Seneca this belief was, alas! consistent with disobedience to the authority which yet he confessed to be Divine. The power of Christian gratitude and love made Paul's life a far nobler and more consistent thing. And what Paul felt, the lowliest disciple of Christ feels too, though in an inarticulate and unphilosophical fashion. As the thrill of the

stricken lute-string evokes the sympathetic vibration of the untouched chord of its companion instrument ; so, when Christ speaks, however softly, yet with a Divine authority, it is to call forth the responsive music of the human soul. There is one explanation of this harmony which deserves consideration : it is the conviction which Christians have formed, that the same Divine Spirit who speaks in the Word, and by the Christ, speaks also in the sympathetic and responsive spirit of man.

5.

THERE IS HARMONY BETWEEN MAN'S ASPIRATIONS
TOWARDS MORAL PERFECTION AND THE RE-
LIGION OF CHRIST.

This assertion may fail to carry conviction to many minds. Oppressed with the spectacle of human sinfulness and degradation, whether freely developed among the brutal and criminal, or carefully concealed by the varnish of luxurious civilization, some observers may be disposed to question the fact of such aspirations as are here assumed. But the distinction already drawn between man's normal and abnormal state must here be borne in mind. We need not extenuate human sinfulness in order to justify a conviction that human nature possesses a strain of moral nobility. Apart from

There is in
man
aspiration
towards a
nobler and
better life.

considerations of selfish indulgence, mankind have an admiration for self-devotion and moral heroism.

Lecky's
*Rise of
Rationalism.*

And as character advances in ethical maturity, this admiration is strengthened by sympathy. Mr. Lecky has well said that characters of remarkable holiness have usually been formed under the influence of one or the other of two principles, the sense of sin, and the yearning for holiness.

The aspiration in question is, we may confidently assert, provided for in Christianity as nowhere else. No doubt, as will be shown presently, our religion does lay the greatest stress upon human sinfulness. But it is therefore all the more gloriously characteristic of the breadth of our Christianity that it appeals to the finest possibilities of moral excellence which the constitution of our nature suggests. The New Testament is a trumpet-call, summoning all who acknowledge its authority to aspiration, progress, and eminence in goodness. Our Lord Himself will submit to no compromise with those who, to gain their ends, would take a lower view than the highest, of the aim to be set before them by those who "would be perfect." He not only lays down laws of the utmost spirituality and comprehensiveness, He calls upon us to come after Him, to "take up the cross and follow Him." Inspiration addresses to us the most stirring and sublime monitions: "Be ye perfect, even as your Father in heaven is perfect!" "I press towards the mark

Christianity
assumes
that in the
human
breast there
dwells an
impulse
towards
moral
progress and
perfection;
and appeals
thereto.

Matt. v. 48.

for the prize of the high calling of God in Christ Jesus!" Instead of encouraging or suffering men to remain contentedly upon the lower level, the religion which we accept forbids us either to retrograde or to pause, commands us to advance and to aspire. The whole provision of the spiritual economy is adapted to secure our progress. We are assured that we shall not in vain obey the call we have received. On the contrary, we are assured, if we are faithful unto the end, of final and everlasting fellowship with "the spirits of just men made perfect." We are told in very simple, but in most welcome and inspiring language, that the goal to which we tend shall indeed be reached, that we shall acquire the moral lineaments of our great Deliverer and Leader: "We shall be like Him, for we shall see Him as He is!"

Philippians
iii. 14.

The whole
provision of
the spiritual
economy
adapted to
secure
progress.

1 John iii. 2

6.

THE PROVISIONS OF CHRISTIANITY ARE EXACTLY
ADAPTED TO MAN'S ABNORMAL, SINFUL STATE.

Is there any inconsistency between the belief that man was made for holiness, and the belief that his condition is a sinful and wretched one? It appears that there is none, when it is remembered that the abnormal implies the normal, that depravity is deflection from a standard of rectitude. Sin could have no meaning were it not both a

Man, and
man alone
of God's
creatures on
this earth, is
sinful.

violation of law and an abuse of nature. We do not charge a beast of prey with moral evil, because of his blood-thirsty tastes and savage ferocious devastations. The beast fulfils his nature ; he may be injurious, but is not blameable. But we say that man has sinned, meaning, that in living in violation of the moral law he is not fulfilling his destiny. Only a nature capable of holiness, and meant for holiness, can sin.

Now, man was made for virtue and piety, and can only find his true development in seeking, and his true satisfaction in finding, these. But if this is incontestable, it is equally certain that his life is deflected from a standard which he cannot but admire, that his way is a departure from a course which he cannot but approve. These things being so, there is an obvious *discordance* between man's proper nature and the actual state in which he exists. This is a fact often strangely overlooked by ethical philosophers. Yet it is impossible to take a just estimate of human nature, unless we consider and allow for the discordance between the possible and the actual in human life. In truth, our moral being is so complex, that whilst it admits of the existence and even the prevalence of sin, it lifts up a voice of protest against the powerful position which evil holds in humanity. There are *dicta* of morality, both natural and revealed ; but with these *dicta* the actual life of men does not

The
discordance
between
man's
proper
nature and
his present
state.

accord. We approve and justify a standard, which, nevertheless, we fail to reach.

If Christianity, or any religion, is oblivious of this very important fact, such obliviousness is its condemnation. But if Christianity assumes this fact, and if its provisions are in accordance with it, then, so far, it is justified. Upon examination, it will be found that the religion of Christ is such, that it has evidently been provided and constructed with reference to the discordance now described. The Scriptures take for granted our strangely divided nature, in which order and disorder, submission and rebellion, strive for the mastery. A great and awful want is acknowledged and declared; but that is not all, for that want a full and perfect provision is made, a provision which evokes from the minds of those who accept it a tribute of grateful appreciation.

Christianity recognizes the existence, power, and curse of sin.

Every reader of the New Testament must be aware that Christianity makes the existence and the prevalence of sin its starting-point. In fact, the reign of moral evil over humanity is represented as the very reason of the existence of our religion. There is very much in our Scriptures which would be adapted to a sinless being: there is the law, there are the impulses, the promises, which we can well believe would be suitable to secure the continuance of such a being in a state of holiness, and his advance to loftier heights of moral excellence. But

The Scriptures deal with man as sinful.

if the New Testament had been intended for such a being, its whole contents must have been reconstructed. For, as it actually is, it presumes that enmity against God exists, and records the provision for reconciliation with Him. Can any inquirer, however superficial, come to any other conclusion than this: that Christianity is a religion designed for a sinful race, and is intended to secure for sinners the blessings of forgiveness, of renewal, of spiritual strength, guidance, progress, and peace?

To be more special upon this point, let us examine *whether with regard to sin, and what sin requires, there is accordance between conscience and Christianity.* They certainly agree in opposing and condemning sin. Yet general custom on the one hand, and popular philosophy on the other, concur in extenuating the evil, proclaiming the necessity, and predicting the perpetuity, of sin. The Bible certainly says very hard things of sin.

Our spirits
confess that
the
Scriptural
condemna-
tion of sin is
just.

- 1 John iii. 4. It is "the transgression of the law," "that which God hates." It is the sign of a heart at "enmity with God." Its ill-desert is such, that no penalty is too severe for those who love and practise sin.
- Psa. vii. 11. "God is angry with the wicked every day."
- Prov. xiii. 15. "The way of transgressors is hard." "The sting of death is sin." "The wages of sin is death."
- 1 Cor. xv. 56.
Rom. vi. 23. All this appears to many very stern and harsh. But if we take the question, not to our inclinations, not to our neighbours, but to the tribunal of our

own conscience, what has this witness,—shall we say this judge?—to pronounce upon the matter? Interrogate, it might be fairly said to every reader, interrogate your own nature! Are you not compelled to admit that all that Scripture says concerning sin is true? that nothing less than this would be the truth? Try to explain away the seriousness, the heinousness, of sin. Listen to the defences, the apologies, by which men have striven to palliate, to excuse, even to justify sin. They do not convince you. On the other hand, you cannot take exception to the treatment of human sin by the Holy Scriptures; when they denounce and rebuke iniquity, when they declare the inconsistency between sin and man's real well-being, they carry your judgment and your better nature with them. Because your heart was not made for sin, your heart witnesses that the Word,—as we term it, the Word of God,—is right, in exhibiting sin as heinous in itself, and as deserving the displeasure of God, the righteous and holy Judge.

Human nature, which witnesses to the reality and enormity of sin, witnesses also to *the need of pardon*. The conscience proclaims that sin is not merely a violation of our nature, but an offence against a personal Ruler and Lord. How deeply rooted is this consciousness of the need of forgiveness, appears from the prominence given, in every religion, to the means by which it is professed that

Our spirits
witness
to our
urgent need
of Divine
forgiveness.

They
approve the
scheme of
redemption
by a
Mediator
and by
sacrifice.

forgiveness may be secured and enjoyed. It is not necessary here to show (which might, however, be most conclusively done) the futility of the devices for expiating sin and for reconciling the sinner, which have obtained in various stages of society, and which have taken shape in various schemes of religious doctrine and ritual. Neither is it necessary here to expound and defend theories of the Atonement. But it must be pointed out, as distinctive of revealed religion, that it is *redemptive*, that it at the same time condemns the sin more trenchantly than has ever been done elsewhere, and absolves the sinner more completely and effectually than elsewhere has even been proposed or professed. Bishop Butler has shown, in his *Analogy*, the consonance between a mediatorial method of salvation and the usual method of the Divine government. Unless we are in rebellion against the whole moral scheme of the universe, we have reason to acquiesce in the central provision of Christianity now under consideration. And our clearest judgment and our best feelings concur in approving the plan upon which the New Testament represents the Divine Ruler as having proceeded. The conscience of the most intelligent and of those most earnestly striving after goodness finds repose and satisfaction in the gospel of pardon and acceptance through Jesus Christ, in whose incarnation and sacrifice the Divine Governor appears

supremely just, and at the same time supremely gracious,—condemning sin and absolving the repenting and believing sinner.

Exception is widely taken in our times to the doctrine of mediation; it is represented by some as violating instead of harmonizing with our convictions of justice. It may, however, be confidently urged that conscience does not rebel against the unadulterated teachings of Revelation. Against these sin and prejudice may revolt, but a quickened and enlightened conscience, never! Those who are offended with this central and vital part of the Christian religion are recommended, in the first place, to examine for themselves what is the teaching of Scripture, and not to waste their energies in fighting a foe of their own invention.

The enlightened conscience never rebels against the Scripture doctrine of mediation.

Another aspect of the treatment of sin and the sinner by the religion of Christ must be considered. There is *a practical hostility to the lofty and exacting demands of spiritual religion*. Whilst the higher nature approves, the baser nature resents those claims. Can this hostility be overcome, and how? A religion which should undertake to pardon sin,—to release the sinner from the penalties consequent upon sin,—and should omit or fail to secure his practical and cheerful submission to the highest law of moral life, would surely betray its origin in man's own selfishness and sinfulness. A religion

Man's nature finds satisfaction in accepting the provision made in Christianity for holiness as well as for pardon

which should, on the other hand, in remitting the consequences of sin, provide for the forgiven sinner's renewal, reformation, and advance in the love and practice of goodness, would seem to proclaim itself the production of Him whose power in the moral universe "makes for righteousness." At all events in this case the moral nature of man will give its cordial assent and approbation, and so far will declare itself a most favourable witness.

Christianity
has
introduced a
moral power
into
humanity
unknown
apart from
Christian
faith and
knowledge.

Now, as a matter of fact, Christianity has introduced a moral power into humanity, unknown apart from the presence of Christian faith and knowledge. This power has proved itself adequate to the vanquishing of the natural enmity of the heart to self-control and self-denial. The Christian religion has found and revealed a way of rendering virtue—which is admittedly admirable and desirable—actually attainable; has made the path of obedience progressively congenial, attractive, and delightful. There is general agreement that this is the distinguishing characteristic of Christianity. First, in point of time, comes the provision for pardon; but first in point of real importance comes the provision of a *spiritual power*, which secures the love and practice of holiness. The evidences of that power are open to the observation of all; the secret explanation of that power is a Christian doctrine, which is indeed reasonable, but may not command a universal credence. It is known to

the disciples and friends of the Lord Jesus that the great motive to obedience is love to a personal Saviour, a motive capable of producing results which no other power could effect. The Apostle Paul has summed up this aspect of our religion in his memorable saying, "The love of Christ constraineth us." A motive like this may meet with the scorn and ridicule of worldly and selfish minds; but it is in the highest degree consonant with our nature. Personal gratitude, devotion, and consecration to a Divine Saviour lead to a higher style of morality, a higher type of obedience than can be secured by any other means, however agreeable to a carnal nature and a worldly policy. Grateful love to the Redeemer, awakened and sustained by the Holy Spirit of God, prompts to purposes which inspire and regulate a new moral life. A motive more in consonance with our moral nature it would not be possible to imagine.

The moral power over the heart and over the conduct exercised by the love of Christ.

Let this twofold dealing with the condition of sinful, feeble man be taken into consideration. Let it be observed how Christianity provides for the absolution of the penitent sinner, and for the renewal of the character and the purification of the life. And then let the highest reason and the best feelings of humanity be called upon to speak as to the excellence and adaptation of this provision to human nature and to human need. And if the witness be favourable, surely the fact is

The twofold aspect of Christianity awakens the consent and admiration of man's nature.

worthy of weight in the estimation of those who believe in a Moral Governor of wisdom and benevolence. At all events, it may be confidently said that so far as the evidence of conscience goes, it supports the claim which we make, that Christianity is Divine, and is worthy of all acceptance.

7.

MAN'S MORAL NATURE WITNESSES TO THE WHOLE-SOME INFLUENCE OF THE RELIGION OF CHRIST UPON HUMAN SOCIETY.

The debt of
human
society to
Christianity.

No just and complete view of man can regard simply the life of the individual. Although there have been and are tendencies impelling men to accept Christianity simply as designed for their individual salvation, it was not thus that our religion was conceived by its Founder and first promulgators; nor is it thus that its enlightened adherents conceive it to-day. Man is social, is a member of the family, of the state, of the race. If there is in human nature a selfish tendency, there is also a principle of sympathy and benevolence. Much stress is laid, and justly laid, upon a spirit of unselfishness, upon what it has become the fashion to call "altruism," as a principle complementary to the quest of well-comprehended self-interest.

It may fairly be argued that the strength of

benevolence in modern society is owing to the teaching and to the impulse of Christianity. This, however, is not our present contention. All that is asked is this: is there an agreement between our "better nature," our unselfish aims and efforts, and the truths of the Christian religion taken in conjunction with their influence upon society?

Let the lessons of the New Testament be candidly considered. The Divine Teacher issues His new commandment, "Love one another." He enunciates the principle of unselfish helpfulness in the admonition, "Freely ye have received; freely give." His apostles enjoin the maxim, "Bear ye one another's burdens, and so fulfil the law of Christ." They strike at the trunk, the root, of selfishness with the axe-stroke, "Let every man look, not upon his own things, but every man also upon the things of others." Does not the true, the higher nature of man listen to these laws and precepts with a wondering reverence, and render to them the response of an approving and consenting testimony?

Yet it is not by words that the giant selfishness is slain. The life, the love, the sacrifice of Christ Himself are the real weapons of this spiritual warfare. The *cross* is the true and effectual inspiration of man's devotion to the interests of his fellow-man; the enthusiasm of Christ is the true source of "the enthusiasm of humanity."

Matt. x. 8.

Gal. vi. 2.

The debt of
human
society to
the precepts
of Chris-
tianity.

Phil. ii. 4.

Its Divine
power over
the heart.

Cowper

“Talk we of morals? O Thou bleeding Lamb,
The grand morality is love of Thee.”

It may be freely admitted that language far too sweeping has sometimes been employed, to describe the actual amelioration of the human lot, which has already been effected by the religion of Jesus Christ. Still, no well-informed and candid person will deny that, of all the forces which have contributed to improve the morals, and to promote the happiness of the race, none can compare for vigour and for efficiency with the Christian faith. Evil is sometimes laid to the charge of Christianity, which is in reality the result of the system of sacerdotalism. But how much of good must in all fairness be credited to the influence of Christ upon mankind!

The warfare
of the
religion of
Christ
against
human vices
and crimes.

Against vice and crime Christianity from the beginning directed its assaults with remarkable energy and success. Against usages and institutions belonging to half-civilized and selfish states of society Christianity prepared its siege of mines and batteries—sooner or later, but only at the right moment—to open fire. The frightful cruelty, the utter and wanton indifference to suffering, the disregard of life, so characteristic of the ancient world, have certainly been immensely diminished by the prevalence of Christian principles. Those principles gradually but surely undermined the degrading institution of slavery, which has now

all but disappeared from among even nominally Christian communities.

What has been done is more than a proof of the beneficent influence of Christianity, and may fairly be deemed an earnest of the triumphs awaiting its progress in the future. There are indications that evils still prevalent, but condemned by our religion, will by its growing influence be checked, if not eradicated. The war has not been carried on with vigour along the whole line where immorality of all kinds is confronted. But this at least may be confidently claimed on behalf of the religion of Christ, that, in every moral conflict in this world, Christianity is on the right side; that, when she speaks, her voice is uniformly and unfalteringly opposed to vice and crime, and in favour of the cause of virtue, liberty, and happiness.

Perhaps even more important than the protest of Christianity against sin is its purifying, elevating, harmonising, and generally beneficial influence upon the social life of men. As a social religion, it has regard to all classes and conditions of men, and seeks their elevation and well-being. It is a kingdom, and its Head contemplates the welfare of every subject; a family in which the interests of no single child are overlooked. It fosters the legitimate development of society, and furthers the progress of mankind towards universal brotherhood and universal happiness. Each Christian

The conquests already made an earnest of those yet to be achieved.

The positive influences of a beneficial character exercised over human society by Christianity.

congregation then only fulfils its mission, when it is a centre of light and spiritual power. Our religion is the enemy of uncharitableness, hatred, envy, social disorganisation, and oppression ; it cherishes "the hate of hate, the scorn of scorn, the love of love." Its aim is to bring mankind into unity, by bringing all men alike into subjection, not to an earthly conqueror or king, but to the true and Divine Head of "the new humanity." Compare its design and its method with those of great military conquerors, or with those of such a fantastic philosopher as Comte, and recognize its vast superiority. Here is the highest ideal of the social life of humanity ; for here the free development of the individual is to play its part in the harmonious and ordered co-operation of all the members of society towards the one great ultimate result.

The incomparable power of the religion of Christ as a factor in human progress.

The enlightened and unsophisticated conscience, weighing these claims of Christianity in virtue of its power to effect a social regeneration, is constrained to acknowledge their validity. Man's moral nature recognizes in this religion her mightiest auxiliary in the holy war, discerns her hope fulfilled, her aspirations realized. Compared with other claimants, Christianity, in the view of morality, stands alone, peerless and unapproachable—

"Fair as a star, when only one
Is shining in the sky."

8.

THERE IS AGREEMENT BETWEEN THE CHRISTIAN
DOCTRINE OF RETRIBUTION AND THE MORAL
JUDGMENT OR CONSCIENCE OF MAN.

Probably there was a time when religion was regarded by theologians too much as a matter of government, when God was represented too exclusively as the ruler and judge. But in our own day it is common to run into the other—the opposite extreme—and, in laying just stress upon the Fatherhood of God, the pity of Christ, the attractiveness of the Gospel, to leave out of sight, perhaps, even contemptuously to disparage, or to deny the moral government of God. Now, however much a sentimental and invertebrate theology may fret against the doctrine of responsibility and retribution, those doctrines cannot be overthrown as long as human nature remains what it is, as long as the Scriptures are accepted as of supreme authority. They are opposed from two sides.

There is a tendency to conceal the governmental aspect of religion

Those who regard man as an automaton, acted upon by physical forces, and acting as acted upon (and these are a very numerous and influential class in our days), deny moral retribution. Carrying the analogy of natural processes and laws into the spiritual realm, they tell us that nature is a system of inflexible laws, and that he who con-

Materialists deny moral retribution.

forms to those laws will prosper, whilst he who violates them will suffer; that in this sense retribution is a fact, and in no other; that a vicious man, who is prudent, will fare better than a virtuous man who is impulsive; and that, as man ceases to be when his body perishes, we need not concern ourselves about a future which is but a dream.

Senti-
mentalists
agree with
Materialists.

On the other hand, those who accept as much of Christianity as falls in with their own fancies and prepossessions, tell us that as God is love, we need be under no apprehension that here or hereafter we shall be called to account for our sins, that a benevolent Deity will secure our happiness irrespectively of our conduct, in view of the righteous and binding law of God.

Now, in this controversy, human theories and imaginations are on one side, whilst on the other are (1) The facts of our moral nature, and (2) the plain statements of Scripture, giving an unmistakably accordant utterance.

Reason and
conscience
uphold the
retributive
character of
God's
government.

Our human life is an education, but it is a probation also. We cannot leave out of view either the reproaches and the remorse of a guilty conscience, or the facts of an overruling and, to some extent, retributive Providence even in this life. Nor, further, can we set aside the anticipation of judgment, which is almost universal amongst men, and which is only exterminated when all is exterminated which raises man above the brutes.

In these respects how perfect is the agreement between the teaching of the New Testament and the enlightened and sensitive conscience of man ! Not to dwell upon such general statements as “God hath appointed a day in which He will judge the world by that man whom He hath ordained,” and “We must all appear before the judgment-seat of Christ,” we may call to mind that from the lips of the benign, compassionate, and gracious Saviour Himself came declarations the most comprehensive and unmistakable regarding human retribution. He pronounced *blessings*, but he also pronounced *woes*. He anticipates that general judgment when all nations shall be gathered before Him, and when the same lips which shall utter the welcome, “Come, ye blessed !” shall also utter the fearful sentence, “Depart, ye cursed !” It is vain to represent religion as wearing only an aspect of benignity ; it wears also an aspect of severity ; and in this two-fold aspect there is a complete accordance with the manifest facts of our nature.

The New Testament agrees with the enlightened and sensitive conscience.

Acts xx. 31.

2 Cor. v. 10.

Matt. xxv. 34, 41.

9.

MAN'S MORAL NATURE FINDS SATISFACTION IN THE REVELATIONS OF THE CHRISTIAN RELIGION CONCERNING IMMORTALITY.

Man alone, of the inhabitants of earth has the power to apprehend and to hope for a deathless

Christianity
satisfies
man's
yearnings
for immortal
life and
blessedness.

life. Men are not to be persuaded that this bodily and earthly life comprises the whole of their being; they have good reasons for believing otherwise. The expectation of an endless hereafter is not merely a conclusion derived from argument; it springs from a natural tendency, a *spiritual aspiration*, strengthened by moral discipline. We refuse to believe that we were made with deathless hopes, destined to be quenched in the cold waters of annihilation and oblivion. Yet reason is insufficient to transform this longing into a definite belief. We can, whilst taught by reason alone, go no further than hope will lead us:

Tennyson's
In
Memoriam.

“ The hope that, of the living whole,
No part shall fail beyond the grave ;
Derives it not from what we have
The likeliest God within the soul ? ”

A religion which shall command the acceptance of man's nature, must satisfy man's loftiest yearnings and anticipations with regard to the future, and must reveal a prospect worthy of man's powers and capacities.

The teaching of Christianity is definite upon these points. It encourages the hope that in a higher condition of existence our best aspirations shall be allowed a wider scope. There will be provision for increase of knowledge : for here we know in part, but there shall we know even as we are known. There will be assimilation of character

to Him who is supremely good: for “the pure in heart shall see God.” There will be limitless accessions to happiness: “blessed are the dead that die in the Lord.” There will be abundant room for the exercise of our social sympathies, in “the general assembly and church of the first-born, which are written in heaven.” There will be, what is pre-eminently congenial to the Christian heart, intimate fellowship with Christ Himself: for “there shall we ever be with the Lord.” There will be eternal security and felicity: for “they go no more out.”

The satisfying nature of the promise given and the prospect revealed in the New Testament.

Matt. v. 8.

Rev. xiv. 3.

Heb. xi. 23.

In such representations and assurances Christianity supplies what nature cannot give, fills up the void, makes the vision plain, the voice intelligible. But the case is not merely one of abstract teaching. The explicit declarations of the Saviour are both embodied in His person, and supported and sanctioned by His resurrection. “I,” said He, “am the Resurrection and the Life; whosoever liveth and believeth in Me shall never die.”

John xi. 25, 26.

Such are, in brief, the revelations of Christianity concerning what must always be of intense interest to men,—the future and unseen state. Such are the prospects held out by the religion which is equally at home in this world and in the world to come.

What has the moral nature of man to say to

Jouffroy.
*Nouveaux
Mélanges
Philoso-
phiques*,
p. 105.

revelations such as these? That nature proposes vast questions; how does it receive these answers? It has been well said: "Every man feels within himself a crowd of desires and faculties which this life does not content; and he would deem himself very unhappy, and Him who has made him very unjust, if his destiny were never to attain this happiness, this perfection of which he has the idea. . . . It is that which unavoidably suggests to him thoughts of the other life; and, these thoughts once awakened within his mind, there is no more rest for him if the doubt remains, and if no clear solution comes to resolve it."

The
alternative.

A nature with such requirements cannot be indifferent to the professions and promises of the religion of Christ. Is it likely that man, so constituted, will turn aside from the revelations of Christianity, and adopt, in preference, the teaching of the materialist and atheist, according to whom man perishes like the brutes, and is no more?—a foam-fleck upon the rushing river of universal being? Or will he not rather exclaim: God made the soul for immortality, and appointed immortality for the soul! Here is found the true and longed-for rest; here the strong, sustaining hope!

CONCLUSION.

The argument presented is one of *adaptation and correspondence*. Man's moral nature being an admitted reality, and the Christian religion an acknowledged fact, it has been attempted to show that the one is fitted for the other. Man's esteem and honour for what is right, his contrition for sin, and his aspirations towards immortality ; all testify to HIM from whom not only do they proceed, but the revelation also that responds to and satisfies them ; all testify to the Cross, that brings peace to the conscience and inspiration to the new and better life ; all testify to the ascended KING Himself, who lives for ever to love and bless, and yet eternally to reign.

The argument one of high probability, cumulative, and practically conclusive

The argument is admittedly one of *probability*, and (it is urged) of probability so high as to afford conclusive reason for action. It is an argument *cumulative* in form. Each one of the particulars mentioned has a certain strength ; conjoined together, they constitute a powerful and conclusive argument in favour of our religion, and justify a cordial and practical acknowledgment of its claims.

THE ADAPTATION
OF
BIBLE RELIGION
TO THE
NEEDS AND NATURE OF MAN.

BY THE
REV. W. G. BLAIKIE, D.D., LL.D.,

AUTHOR OF
"THE PUBLIC MINISTRY OF OUR LORD;" "BETTER DAYS FOR WORKING
PEOPLE;" "PERSONAL LIFE OF DAVID LIVINGSTONE," ETC.



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164, PICCADILLY.

Argument of the Tract.

THIS Tract is an application of the design argument to the religion of the Bible. It proceeds on the assumption that the Bible unfolds a Divine provision, having for its purpose to remedy all the evils which sin has entailed upon man. The question discussed is, whether this provision is found in practice to be really adapted to its object? Does it really remedy the evils introduced by sin? In answer to this question, attention is directed in the first instance to the primary evil caused by sin, namely, separation from God, involving to man the sense of guilt, liability to punishment, moral disorder of his soul, and emptiness and desolation as regards his spiritual nature. The Tract endeavours to show that the provisions of grace, as unfolded in the Bible, are adapted to meet all these evils, and do actually meet them. Having thus shown that the religion of the Bible is adapted to remove the chief evils entailed by sin, the Tract proceeds to show that it is not less adapted to remedy certain minor disorders affecting the other parts of man's nature. It is affirmed that the Bible shows a due regard for man's *bodily*, his *intellectual*, and his *social* nature; and the Tract enters into a variety of particulars under each of these heads to make good the position. Thus the religion of the Bible proves to be a highly successful instance of design; and from this a strong practical argument arises on behalf of its Divine origin.

THE
ADAPTATION OF BIBLE RELIGION
TO THE
NEEDS AND NATURE OF MAN.



INTRODUCTORY.



SKILFUL adaptation to their purpose is so constant a feature of the works of God, that we naturally look for it in every product of the Divine hand. If the human eye is wonderfully adapted to the purpose of vision ; if the backbone, with its remarkable combination of properties—firm as a pillar, flexible as a chain, light in point of weight, and graceful in form—is a triumph of skilful adaptation ; if the family constitution is an unrivalled contrivance for securing unity, affection, mutual help, and kindred virtues,—we may be sure that any scheme devised by God for promoting the spiritual and eternal welfare of men will exhibit remarkable features of adaptation to its purpose. Let there be a clear perception of the purpose on the one hand, and a competent knowledge of the scheme on the other,

Adaptation
a mark of
God's works.

and the adaptation of the one to the other will follow as a matter of course.

The great problem of revelation to remove sin and its effects.

The great problem which any true revelation must solve is, how to remove sin and its consequences. It is here that natural religion fails. Sin has created a gulf between man and God; it has disordered man's moral nature; it has compelled God, notwithstanding His infinite compassion, to hold him a criminal, with whom friendly fellowship is impossible. The great purpose of revelation is to solve this problem. It unfolds a divine plan designed to take away sin, reconcile God and the sinner, restore moral health to man's soul, and thus fit him anew for the ends for which he was formed. Is this scheme really adapted to its end? Is the remedy suited to the disease? When Naaman washes in this Jordan is he really cleansed? In a word, is there a divine adaptation between the provision of the Gospel, and the purpose for which it has been devised?

Chiefly to reconcile God and man.

Subordinate fruits of sin likewise affected by the Gospel.

We have said that one of the chief effects of sin is to create a schism between God and man, and break up the friendly relation which would otherwise unite them. If the remedy be adapted to the disease, this is the chief evil for which it will provide a cure. But besides this effect of sin, it has infected man's whole nature, and disturbed more or less the whole operations of his being. It has shewn its influence very powerfully in his

social relations, creating great discord between man and man, where harmony is so desirable. If the remedy be in all respects adequate, it must have a healing and elevating influence in all these directions; it must purify and regulate all the springs of activity; it must sanctify and brighten all the lawful pursuits of life; it must sweeten the relations of man to his fellow men; it may not all at once, even in a metaphorical sense, cause the wolf to dwell with the lamb, but it must create a movement toward that consummation—toward that restored golden age when they shall not hurt nor destroy in all God's holy mountain.

We propose therefore in the present tract to consider the adaptation to this result of the plan of recovery for sinners, as unfolded in the Gospel and recorded in the Scripture. In doing so, we shall consider, I., Its *primary* or chief adaptation, *i.e.*, its adaptation to the case of man as a guilty and polluted being before God; and II., Its *subordinate* adaptations—its adaptations to the physical, intellectual, and social nature of man,—its power to counteract the effects of sin in these departments, and thus, in all directions, redeem and elevate mankind. We assume that the Scriptures of the Old and New Testaments are the authorized records of the divine plan, and it is to them, therefore, that we go for information as to what the features of that plan really are.

Object of
the Tract.

Adaptations
to be
considered.

I.

ADAPTATION TO THE SPIRITUAL NEEDS OF MAN.

The experi-
mental
argument.

IN demonstrating the adaptation of the salvation of the Bible to the spiritual needs of man, considerable stress must be laid, in the first instance, on the consciousness of man himself. Inquiry must be made into the nature of his *experience* when he cordially receives the divine remedy, that is, when he cordially accepts Christ as his Saviour, and relies on Him for all the blessings of salvation. The sense of adaptation which comes to him between his own need and the remedy provided in the Gospel constitutes what has been called the *experimental* evidence ; but to some this evidence has appeared not to be of a very solid or satisfactory nature. It has seemed too visionary and ideal, too near the region of dreams, too dependent on a heated imagination ; in short, it has appeared to want that solid character which evidence on so

Its solidity.

vital a subject ought above all to possess. For this objection there might be valid reason if it were proposed to rely on a very limited body of experience—let us say, the experience of a single individual. But no one would base the argument on what might possibly be the vagaries of a single mind. The experimental argument is valid only if it express the result of a wide induction of cases, an induction

so wide as fairly to represent the ordinary experience of those who cordially and earnestly receive Christ as Saviour. Moreover, it must be taken in connexion with the whole body of *external* evidence, the evidence of miracle and prophecy, the character of Christ, and the spirit of the Gospel. Flanked by these bulwarks, the experimental evidence will be found to be of great interest and of much use.

It must be taken in connexion with other evidences.

The argument from the adaptation of the Gospel to the spiritual needs of man will come out more clearly if we specify some of these needs, and consider the manner in which the Gospel meets them.

1. Chief of these needs is *reconciliation to God*. And prominent among the blessings that attend the hearty reception of Christ is the conscious possession of reconciliation. "Being justified by faith, we have peace with God through our Lord Jesus Christ" (Rom. v. 1). The expressions in common use in reference to this process are such as denote the end of a great mental conflict, the finding of a secret treasure, the removal of an oppressive burden, the dawn of a glorious day after the anxieties and terror of a weary night. How full the records of Christianity, inspired and uninspired; are of such experiences need not be said. Perhaps the most striking feature of the change that took place on the day of Pentecost, and at similar times, was the sense

The Gospel brings about reconciliation.

The heart that believes is satisfied.

Proofs
ancient and
modern.

of intense relief, the feeling of profound satisfaction that filled and charmed the soul. The experience was so complete that no doubt remained whether or not it was the true remedy that had been received. No pagan who went to the cross, and believed on the Crucified One, ever returned home to balance arguments between the sacrifice of Christ, and the devices of propitiation which Paganism proposed. The same thing may be said of pagans now. When once the Gospel is spiritually received by a Hindu, no question remains as to whether a pilgrimage to Delhi, or an act of penance before the car of Juggernaut, would not be more efficacious than faith in Christ. The sense of oneness with Him seems to solve all questions and remove all fears. The feet rest on the rock, and the new song of praise for sin forgiven, for grace bestowed, for the promise of all needful blessing bursts from the grateful heart. Nothing could express the process better than the words just quoted, "Being justified by faith, we have peace with God."

Luther.

Conspicuous cases of the same experience occur through all Church history. Luther's case is remarkable. Before his time the "easy, artless, unencumbered plan" of the Scriptures had been perverted into one of "the complex works of man." Divine grace and human merit had been rolled together, and the effect of the one had been neutralized to a large extent by the presence of

the other. By a flash from heaven Luther apprehended the divine way of grace, and the peace which he had in vain sought for years descended into his soul. John Bunyan was another of the distinguished men whose burden, as he has symbolized it in the *Pilgrim's Progress*, fell from his shoulders when he came to the cross of Christ. Chalmers had a struggle similar to Luther's, and for a whole year of intense moral effort struggled to come up to the requirements of the moral law; but in spite of all, he felt its heights more inaccessible than ever, while his own corruption seemed only to acquire new power. It was only when he truly accepted the truth of gratuitous salvation by Christ that peace came into his bosom; but once he rested on that foundation, he never had the slightest distrust of it, never felt a desire for any other security, or any other channel for the reception of heavenly blessings.

So far as the consciousness of those who have tried the remedy can testify in its favour, the evidence is complete. But besides this, reflexion on the nature of the Gospel provision confirms belief in its adaptation to the purpose in view. The great want in all other plans of reconciliation is the want of a propitiation of value sufficient to atone for sin. On the other hand, that which at once and conclusively commends the plan of the Gospel is the glorious sufficiency of the propitiation. The

Bunyan.

Chalmers.

Nature of
the process.

Sufficiency
of the
propitiation.

precious blood of Christ is abundantly sufficient to cancel the guilt of man. The awakened conscience feels both that a propitiation is needed, and that the propitiation must be adequate to the offence. It is in vain to tell the guilty conscience that God is merciful, or even that God is a father, and that His heart beats with a father's goodwill. What can such things do when one's own conscience loudly demands retribution for one's sins? The feeling that there must be a satisfaction to justice is simply overpowering. Was not David Absalom's father? Was not David's heart full of a father's compassion, nay, was he not subject to a weakness in that very region,—a weakness on which Absalom might well count in his favour? Yet when Absalom slew Amnon, he could not meet his father, he could not remain at Jerusalem, it behoved him to flee to Geshur. All his father's affection could not save him. How can we count on the Almighty disregarding the claims of justice in a way in which even David could not disregard them? How vain the attempt to find a place of security on the shaking sides and flaming heights of Sinai! A propitiation must be found to give the sinner confidence before a holy God. And of all possible or conceivable propitiations one only possesses the needful quality—"Behold the Lamb of God, which taketh away the sin of the world!" Even though the revelation in Scripture of the evil

The
conscience is
not easily
satisfied.

of sin far exceeds all that the natural conscience teaches, the sufficiency of the propitiation of the Gospel is in no degree impaired; rather it comes out the more clearly the more fully the demands of the law are tabulated; for the very glory of the divine method is that "where sin abounded, grace did much more abound" (Rom. v. 20).

The Gospel provision satisfies.

2. Another of the soul's spiritual needs is—*renovation*. Our moral nature is disordered, and one of the chief evidences of disorder is the conflict between duty and inclination. Conscience and the will are not at one. We may form beautiful ideals, but we cannot realize them. Desires which are known to be poor and mean often prevail in us against the voice of conscience and even the protests of reason. And often the state of things is worse than that of a conflict in which the bad usually gets the better of the good. In many, the result is a state of helpless captivity. In these cases, lusts of the body rise to sovereign power, and crush down in ignominious bondage every good and wholesome desire. Men and women are degraded far below the level of brutes. In the grip of imperious lusts they are powerless, struggle as they may. Where the outward degradation is not so great, the triumph of evil is not so conspicuous; but that evil reigns is often lamentably apparent, even to the persons themselves. Often their lives are governed by a selfishness that, regardless of

The Gospel brings renovation.

The great need of it.

Our help-
lessness.

others, seeks to secure everything for themselves. The will of God, which they know to be the true sovereign authority of the world, is little regarded, except in so far as the ordinary usages of society may happen to agree with it. Their lives do not conform to any noble standard. And even at the very best, there is such a discord between what they are inclined to do and what they ought to do, that their highest achievements in duty are but the result of a hard struggle—not the free spontaneous movements of souls delighting in the ways of truth and righteousness.

Gospel
renovation
lays hold
of the
affections,

For this great need of the human soul, likewise, the Gospel has its provision. It is a provision which embraces the whole nature, but its chief peculiarity is that it lays hold on the affections. It creates a personal attachment between the sinner and the Saviour who died for him. It impresses the heart with a profound sense of the kindness and love shown by Jesus in suffering, the just for the unjust, to bring them to God. This attachment to Christ acts sympathetically on

And the will.

the will, causing it to turn from all that is offensive to Christ, to all that is well-pleasing in His sight. Nor is this change caused by the action of our own powers. The Holy Spirit, the third Person of the Godhead, has entered the soul, and His office is to convert and elevate it; to raise conscience from the dust, and restore it to its

Offices of
the Spirit.

throne ; to bring conscience and will into harmony ; in a word, to renew the whole nature after the image of Him who created it. Revelations are made by the Spirit of divine truth and human duty, towards which the soul is moved. A higher ideal than any that the human mind ever devised is placed before the eyes—the perfect example of the Lord Jesus Christ. Experience of the sweetness of divine fellowship strengthens every motive to a life of faith and holiness. Prayers like that of Paul for the Ephesians indicate the infinite fulness of the stores out of which the soul may seek its supplies : “For this cause, I bow my knees unto the Father of our Lord Jesus Christ, . . . that He would grant you, according to the riches of His glory, to be strengthened with might by His Spirit in the inner man ; that Christ may dwell in your hearts by faith ; that ye, being rooted and grounded in love, may be able to comprehend with all saints what is the breadth and length and depth and height, and to know the love of Christ, which passeth knowledge, that ye might be filled with all the fulness of God” (Ephesians iii. 14–19).

Extent
and high
standard of
the renewal.

In regard to renovation as to reconciliation, experience shows that this Gospel provision is so superior to any other, that once it is apprehended the soul is satisfied of its efficacy, and never turns from it in search of another. Putting on the Lord Jesus

This
provision
also satisfies

The power
of personal
attachment
to Christ.

Christ was St. Augustine's introduction at once to inward peace and satisfaction, and to the secret of a holy life. In receiving Christ as their personal Saviour, both Luther and Chalmers found a power capable of overcoming all the unruly motions of their hearts. And in all ages of the Church and in all ranks of life, personal attachment to Jesus Christ has been found by far the most efficient means of mortifying the flesh, conquering the world, crushing selfishness, and nurturing philanthropy. Obedience acquires a new character when it springs from love, and especially such love as Christ inspires ; nor is any sacrifice too great or any attainment too lofty when it may be said of us, We live, yet not we, but Christ liveth in us ; and the life that we live in the flesh we live by the faith of the Son of God, who loved us and gave Himself for us (Gal. ii. 20).

The Gospel
provides
Divine
fellowship.

3. This leads us to notice another of the spiritual needs of the soul—*Divine fellowship*. Man, by his very constitution, is dependent on God. He cannot reach the perfection of his nature or the maturity of his powers without the nurturing, expanding, developing influence of God. He depends on God as really and as much as the earth depends on the sun. There can hardly be conceived a body less complete in itself, or more dependent on another body, than this earth. What would it be without the sun ? A poor, opaque ball without light, or

heat, or colour ; perpetual night brooding over land and sea, mountain and valley ; perpetual frost binding all its waters, and making life impossible on its surface. Such, too, must man be without God. And so we find that even in his disordered state, and while his controversy with God is not yet ended, man vaguely thirsts after Him. He desires to be nearer the great Being in whom he lives, and moves, and has his being. Like a traveller that has heard vaguely from natives of some great lake or river that determines the aspect of the country he is exploring, and is constantly trying to reach it, so man desires to get nearer to God, on whom all the problems of life and all the aspirations of the soul depend. This feeling is indeed balanced by another—by man's shrinking from God, and endeavouring to hide from Him, like Adam among the trees of the garden. Conscious guilt inspires terror ; but it does not quite subdue the natural feeling of dependence, and the natural desire to know more of God. There must be a chief good somewhere, and where can it be but in God ? There must be something to satisfy the soul, to answer its high aspirations. There must be a Being who can teach, and correct, and guide it, and bring it up to the highest enjoyment of which it is capable. On such a Being the thoughtful soul yearns. What provision does the Gospel make for the satisfaction of this need ?

Man without God like earth without the sun.

Chief good found in God.

Loving
relations
with God.

The Gospel not only reveals God in Christ as providing reconciliation and renovation, but likewise as entering into the closest and most loving relations with all who accept His offers and believe on His Son. The reality and the intimacy of this communion were beautifully shadowed forth by the incarnation of God's Son. In the person of Christ, the nature of God and the nature of man met to constitute a single personality. No more wonderful proof could have been given of God's purpose that the fellowship between God and man, in the economy of grace, should be of the most intimate kind. Under the provisions of the Gospel the natural relation of creatures to a creator is supplemented by relations greatly higher. God is now the Father of His children; and so far as the difference between the finite and the infinite allows, they are on the same footing with Him as children are with an earthly father. Sometimes the relation is expressed by the figure of a spouse, the figure that denotes the closest and tenderest of all human ties. Derived from other objects, we have such figures as that of the shepherd in reference to his flock, the vine to the branches, and the members of the body to the head. But the Divine Person with whom these close relations are formed in the first instance, is not He who dwells in light inaccessible and full of glory. "The Word was made flesh, and *dwelt among us*;" and though

Figures :
Sons—
Spouse—
Shepherd—
Vine.

The
incarnation
of THE
WORD.

“no man hath seen God at any time; the only begotten Son, who is in the bosom of the Father, He hath declared Him.” Our fellowship with the Father is through the Son, through Him who was “bone of our bone, and flesh of our flesh.” No better link of connexion could be conceived than that furnished by Him who is Son of God and Son of man in one: on the one side, the brother of humanity; on the other side, the fellow of the Everlasting God.

It is impossible even to touch on all that comes to the earnest believing heart from this restored fellowship with God. We simply note a few outstanding points. Fruits of fellowship.

(a) *Transformation into God's likeness.* By a law of our nature we imitate those in whose company we often are; and the more we admire and love them, the more do we thus imitate. So hearts that are much in fellowship with God, through Jesus Christ, become assimilated to Him. “We all,” says the Apostle, “with open face, beholding as in a glass the glory of the Lord, are changed into the same image from glory to glory even as by the Spirit of the Lord.” Transformation.

(b) *Invigoration of our spiritual life.* Like all living things which do not contain the spring of vitality in themselves, our spiritual life decays and languishes if it be not sustained by regular communion with the Fountain of living waters. Fel- Invigoration of spiritual life.

lowship with God sustains faith, courage, humility, unselfish love, patience, meekness, and all the other qualities of the renovated nature. They that wait on the Lord renew their strength: they mount up with wings as eagles; they run and are not weary, and they walk and are not faint. (Isa. xl. 31).

Support and
consolation.

(c) *Support amid toils, and consolation under trials.* Strong men may rejoice to run a race, and the glory of young men is their strength. But as years roll on and strength becomes impaired, constant toil comes to be oppressive, and the call for patience and perseverance is not easily responded to. Even in the very dew of youth, many turn from a life of hard toil, and dally with carnal pleasure, let the cost be what it may. And if toil protracted to the very close of life, with little relaxation and much monotony, be hard to bear, much more intolerable is the burden of disappointment, anxiety, and pain. It is not easy to fight one's way through care, opposition, perplexity, and endless worries. It is not easy to bear the loss of fortune and friends, or of health and happiness. The blows that fall on the human heart are often fearfully severe. It was surely not meant that man should have to bear all these things in loneliness and helplessness. In nature, we find that in the neighbourhood of stinging plants, other plants grow whose juices neutralize the sting. Is it the

Man not
designed to
bear in
loneliness
and helplessness.

sad lot of man to bear the sharpest and most irritating of all stings apart from the possibility of relief and succour? Is there no balm in Gilead, is there no physician there?

For this very touching and terrible want of his nature, fellowship with God furnishes the blessed remedy. In many ways it sweetens the bitter waters of life. Hard toil becomes easier to bear when it is felt to be part of the discipline arranged for us by a loving Father; when, instead of some austere and heartless taskmaster, we feel that our service is done to the Lord. Patience and perseverance become easier when life is measured by eternity, and at the close of its brief hour, there is the sure prospect of unending rest and peace. Burdens are more easy to bear when the promise is realized, "Cast thy burden on the Lord, and He shall sustain thee" (Psa. lv. 22). Trusting in Him who clothes the lilies and feeds the ravens, saves the heart from many a visitation of distracting care. No feature of our religion is more blessed or more remarkable than its provision of comfort in overwhelming trial. "When thou passest through the waters I will be with thee, and through the rivers they shall not overflow thee; when thou walkest through the fire, thou shalt not be burnt, neither shall the flame kindle upon thee" (Isa. xliii. 2). "Yea, though I walk through the valley of the shadow of death, I will

Toil and
trouble
mitigated.

God's
promises.

fear no evil : for Thou art with me ; Thy rod and Thy staff, they comfort me.

Satisfaction
and rest.

(d) *Satisfaction and rest of soul.* No higher or better portion can even be conceived than that which comes to us by Christ. Our relation to God is the closest that can be. Our inheritance is the best and the largest—"The Lord is the portion of mine inheritance, and of my cup" (Psa. xvi. 5). Our difficulty lies in realizing all to which we receive a claim. The smallness of our capacity, the stiffness of our faculties, the dullness of our hearts, the worldliness of our feelings, may all distress us, but not the smallness of our heritage. That heritage leaves no reasonable desire unsatisfied. While others sigh that all is vanity and vexation of spirit, the hearts of God's children delight themselves in fatness. Others are jaded and weary : they renew their youth like the eagle. Others feel that there is nothing worth having : they say, "Whom have I in heaven but Thee, and there is none on the earth that I desire beside Thee ; my heart and my flesh faileth, but God is the strength of my heart, and my portion for ever" (Psa. lxxiii. 25, 26).

Enjoyment
in nature
and life.

(e) *New enjoyment in nature and in life.* Nature has a new aspect and a new interest for those who know God, and love Him as their Friend and Father. It is not only the work of His hands, it is the utterance of His mind and the revelation of His heart. Its mountains are symbols of the stability

of His love. Its streams represent the perpetual current of His goodness. The sun shows Him brightening, warming, fertilizing, beautifying all. The silver dawn and the golden sunset foreshadow a life in which the bright hope and joyousness of youth are united with the tranquillity and mature joys of age. And as nature thus becomes full of new beauty and glory, so ordinary life is wonderfully enriched and sweetened. God "blesseth the habitation of the just" (Prov. iii. 33). Daily bread is sweeter when it comes from His hands. All the blessings and enjoyments of domestic and social life become better when they are no longer rivals to God Himself, or regarded as the chief good, but when they are received from Him, in addition to His unspeakable gift, to increase the sum of daily enjoyment. The resources of art and learning, the treasures of literature and science, the amenities of social intercourse, have a new zest and satisfaction when crowned by the blessing of God. The thorny wilderness is changed into a smiling garden; for "wisdom's ways are ways of pleasantness, and all her paths are peace" (Prov. iii. 17).

Symbolism
of nature.

Let us add a word respecting that exercise of soul—prayer—by which its fellowship with God is chiefly maintained.

The
privilege of
prayer.

To have intercourse with heaven is always elevating; to maintain the habit as a daily exercise, if only it be devoutly carried out, if it be prayer in

The reflex
influence
of prayer.

spirit, and not merely in form, is truly hallowed. The ladder between earth and heaven, on which the angels of God ascend and descend, is a glorious possession in any house. To have a means of communication with the Heavenly Father, by which every want, every care, every sorrow and trial may be carried to His ear, and by which the answer may come down in contributions of wisdom and strength, of patience and trust, of peace and joy and hope, is a privilege of priceless value. When we think too how prayer re-acts on the soul, lifting it up to heaven in the very exercise, placing it at the throne of grace, bringing it into the very presence of the living God, we may understand something of its marvellous influence. Nothing is more striking than its tranquillizing power, however great the tempest that may have swept over the soul.

Its tran-
quillizing
effect.

“ Lord, what a change within us one short hour
Spent in Thy presence will prevail to make !
What heavy burdens from our bosom take !
What parch'd lands refresh as with a shower !
We kneel, and all around us seems to lower ;
We rise, and all, the distant and the near,
Stands forth in sunny outline, brave and clear.
We kneel how weak, we rise how full of power ;
Why therefore should we do ourselves this wrong
That we are ever overborne with care ?
That we should ever weak or heartless be,
Anxious or troubled, when with us is prayer,
And joy and strength and courage are with Thee ? ”

TRENCH.

4. We add a fourth spiritual need of man's soul for which provision is made under the Christian scheme—*human fellowship in the service and enjoyment of God*. Our nature is social; and however necessary it is to recruit the springs of spiritual life by personal communion with our Father who seeth in secret, we are greatly dependent on the fellowship of our brethen for help and stimulus, for guidance and encouragement in the service of God. Under the Old Testament there were the great yearly festivals, when faces were brightened and hearts cheered by the companionship of friends without number, assembled to worship the God of Israel. Under the New Testament, we have the Christian Church, with its organization of ordinances and its spirit of brotherhood, its meetings for common worship, and its methods of united work. We have that great society, nearly nineteen centuries old, in which we are united to the great and good of all times and lands. We are compassed about by an exceeding great cloud of witnesses, whose past attainments rouse us from our apathy, and set before us a right noble goal. We get the benefit of the varied gifts and graces which are specially bestowed on some members of the Church, in order that others may share the edification which they are fitted to promote. We share the joy of common blessings, and the distress of common trials. Our hearts are enlarged by

The Gospel provides human fellowship in the service of God.

The Christian Church.

Its benefits.

Fellow-
workers with
God.

sympathy for our brethren ; and in watering others, we are watered ourselves. We get work to engage in which draws out our energies, which constrains us to be partners with God, which offers a reward beyond all earthly recompense, which beareth fruit unto life eternal. We get a brotherhood to love, and to love us in turn ; we find congenial friends whose kindness brightens our path in the life that now is, as it helps us on toward that which is to come. In a word, we come to Mount Zion, and the city of the living God ; to the general assembly and church of the first-born which are written in heaven, and with them we enjoy all the more the fellowship of God the Judge of all, and the spirits of just men made perfect, and of Jesus Christ, the Mediator of the New Covenant, and the blood of sprinkling that speaketh better things than that of Abel (Heb. xii. 22-24).

These
blessings
are realities.

Such are some of the provisions of the Gospel for the needs of man's spiritual nature. Let us say regarding them that they are as much realities of human experience as any other phenomena that appeal to the inner nature of man. They no more belong to the region of dreams or shadows than do these other phenomena. Is it a reality of my inner experience that when I am frustrated in my fondest hopes, when I am baffled in my strongest efforts, when I am deprived of my most prized treasure, my heart is agitated, I feel a sting of pain ? Then

it is not less a reality of my experience that when I am able to believe that all this is appointed for me by a loving Father, and is part of the discipline by which He prepares me for the very highest blessings I can know, the pain is relieved, the sharpness of the sting is removed, my soul returns to a state of rest. Must I draw a line between these experiences; and while the one remains a hard and indubitable reality, must I concede that the other is but the baseless fabric of a vision? It were gross absurdity to do so, and it were unreasonable in any one to ask that it be done. As well might you tell one that the sting of a nettle is a reality, but that the soothing influence of the juice of the dock is a mere dream of the imagination. In the physical world both are equally realities. And in the spiritual world, while the disorder and terror and weariness and woefulness of human life cannot be denied, as little can it be fairly questioned that even in the midst of trial, faith in God as revealed in Christ brings order, satisfaction, strength, comfort, and serenity of soul; enables one to rise above the region of disturbance, and on the serene heights of hope, to rejoice with joy unspeakable and full of glory.

The remedy
as much a
reality as
the evil.

“As some tall cliff that lifts its awful form,
Swells from the vale, and midway leaves the storm,
Though round its breast the rolling clouds are spread,
Eternal sunshine settles on its head.”

II.

SUBORDINATE ADAPTATIONS.

Secondary
place of
subordinate
adaptations.

IN proceeding to point out some of the subordinate adaptations of our religion to the nature of man, we must bear in mind that being subordinate, they cannot be expected to occupy in the Word of God that place of prominence which belongs to the primary purpose of revelation. It cannot be too emphatically insisted on that that purpose, as we have just seen, is the restoration of fallen man to the favour, the likeness, and the fellowship of God. If the Bible had not had this for its great object, it would have had no sufficient *raison d'être* ; nor need we be surprised that those who do not regard it as given for this end, perceive no sufficient ground for the high claims that are advanced on its behalf. But it is not fair to judge it as if its great object had been to give a scientific record of the construction of the material world, or to present a philosophical theory of the universe, and of all things human and divine ; or to settle the principles of political government, or the laws of social well-being. To do so would be as foolish as to judge of a watch for some other property than its capacity to keep time, or of a rifle for some other feature than its power to carry a bullet to

the mark. Evidently a book given for one grand purpose must be judged of mainly by its capacity to realize that purpose. The Bible, designed to reveal to man the way of life, must be judged of mainly by its adaptation to that end.

But at the same time it is reasonable to believe that if the Author of our religion be also the Former of our nature, proofs will be found in the contents of the Bible of many subordinate adaptations to that nature. The simple fact that both are from the same source would justify this expectation. In addition to this, we are to bear in mind that the whole nature of man has suffered from sin, and that the healing influence of the remedy may be expected to be as comprehensive as the disastrous influence of the disease. Our relation to God, once it is restored, cannot but have a beneficent influence on the other relations we were designed to sustain. The flying off of a planet from its orbit must damage all its internal economies; its return to its orbit must tend to rectify them. We are now to show how Christianity, besides rectifying man's relation to God, bears beneficially on his other relations and interests; and though the points which we select may not be very conclusive separately, the sum of them will be found to constitute an argument of no insignificant strength.

Author of
the Bible
also Author
of human
nature.

Extent
of the
remedial
appliances.

I. *Adaptation to Man's Bodily Nature.*

Bodily
nature.

Body a ser-
vant, but
cared for as
such.

IN a sense, the Bible teaches us to think lightly of our body. "Fear not them that kill the body ; but fear Him who is able to destroy both soul and body in hell" (Matt. x. 28). But evidently it is in a comparative sense that this estimate of the body is made ; it is as if it had been said, to save the body at the expense of your soul is like saving your coat at the expense of your skin, or saving a jewel case at the expense of the jewel. "I buffet my body," says St. Paul, "and bring it into bondage ; lest by any means, after that I have preached to others, I myself should be rejected." (1 Cor. ix. 27, R.V.) The body, according to his figure, was prone to be presumptuous, and to crave a consideration and tenderness of treatment that interfered with far higher interests and claims. The apostle deemed the presumption intolerable ; he buffeted his body as some men did their slaves, to teach it its own place, and not suffer it to trample on what was infinitely more precious than itself.

But while the Bible is most particular to allot to the body its own place of subordination, it manifests no small measure of regard for it in that place as a part of the nature of man.

1. Thus, in the first place, it regards it *as a*

divine work, well fitted to fill us with admiration and gratitude towards its great Author. "I am fearfully and wonderfully made," says the Psalmist (Psa. cxxxix. 14); and to justify the remark he sets forth at some length the marvels of the process by which the embryo in the womb is advanced to the wonderful structure of the human frame. Each organ of the body is the work of the divine hand—"He that planted the ear, shall He not hear? He that formed the eye, shall He not see?" (Ps. xciv. 9.) So likewise the whole plan of the body the adjustment of organ to organ is a divine work. "If the whole body were an eye, where were the hearing? If the whole body were an ear, where were the smelling? But now hath God set the members every one of them in the body as it hath pleased Him" (1 Cor. xii. 17). A structure like the body, on which God has bestowed so much pains, cannot but be worthy of our care. This is the very opposite of the Manichæan doctrine, that the body is the work of the Evil One, or that it has been hopelessly corrupted by evil influences. It is not to be destroyed, but kept under; just as the imagination is to be kept under the sway of reason; just as any lawful desire is to be kept under the control of conscience. Its place is the place of a servant; in that place it deserves all due consideration; but never, on any pretext whatever is it to be allowed the place of master.

The body
regarded as
a Divine
work.

In what
sense it is to
be kept
under.

The body
healed by
Christ.

2. Regard for the welfare of the body was shown by our Lord in *His miracles of healing*, and other mighty works. By far the greater part of His miracles were directed to restore the functions of the body. Blindness, deafness, lameness, paralysis, leprosy, fever, were tokens of bodily disturbance and disorder; and the power of Christ was employed to remove the disorder, and to make the sufferers "whole." In the wilderness He had respect for the hungry multitude, and (though He had not done it for Himself under Satan's temptation), He provided food miraculously to assuage their bodily craving. The evil spirits which He cast out were odious to Him, for besides perverting the soul from its highest functions, they destroyed the very instincts of the body, driving some of their victims now into the fire and now into the water. In the symbolical language of Scripture, the highest spiritual blessings find appropriate emblems in connexion with the body: Jesus is the Shepherd who tends and feeds us, and the Physician who heals us; He supplies the bread of life and the water of life, as Moses in the wilderness procured the manna from heaven, and the water from the rock; and in such a book as the Song of Solomon, according to the generally received view, the highest style of physical beauty is employed as a symbol of that moral excellency that marks Him as the chief among ten thousand.

3. Higher than this, however, is the degree of respect accorded to the body in the Bible, when it is represented as "*a member of Christ.*" That mystical union of believers to Christ, which is so instructive an emblem of the manner in which we share His spiritual benefits, embraces the body as well as the soul. He is the Head of the body, of which they are the members. "Know ye not," says the apostle, "that your bodies are the members of Christ? shall I then take the members of Christ, and make them the members of an harlot? God forbid" (1 Cor. vi. 15). For a Christian to pollute his body with sensual sin is to degrade and dishonour a part of Christ. Instead of a trifling offence, it is a horrible transgression.

The body a member of Christ.

4. Similar is the view in those passages where the members of the body are represented as in a sense *subjects of sanctification*, and servants of righteousness. "I pray God your whole spirit and soul and body be preserved blameless unto the coming of our Lord Jesus Christ" (1 Thess. v. 23). "Neither yield ye your members as instruments of unrighteousness unto sin; but yield . . . your members as instruments of righteousness unto God" (Rom. vi. 13). "Let us draw near with a true heart, . . . having our hearts sprinkled from an evil conscience, and our bodies washed with pure water" (Heb. x. 22). If it be asked, How can the body become a subject of sanctification? Is not

The body a subject of sanctification.

the seat of sin in the heart, in the will, not in the flesh? Undoubtedly; and the reclaiming of the members of the body from the service of sin to the service of righteousness is a spiritual process. Nevertheless, the expressions in question may find justification if we consider the law of *bodily habit*. What is done often by the organs of the body comes to be done readily, almost unconsciously and mechanically. The profane swearer utters his vile words almost unconsciously; the organs of speech seem instinctively to frame the customary sounds. A sanctified body, on the other hand, is one in which, by the law of habit, all the powers and organs adapt themselves readily to the purposes of righteousness. A body thus trained is more worthy of honour than a body habituated to the ways of evil; in seeking to effect this change, the Bible honours the body.

The body a
temple of
the Holy
Ghost.

5. A still higher step seems to be taken in Scripture when the body is set forth as the *temple of the Holy Ghost*, so that to defile it is a sacrilege, a shameful dishonouring of a holy shrine. In reality it is the same view that is conveyed by this figure as by that which represents the Christian's body as a member of Christ. But in the figure of the temple, the idea is perhaps more imposing; it is associated with what of all material things seems to be purest, and most deserving to be preserved in purity—a temple; and with the Person who, by

reason of His purity and purifying function, enjoys *par excellence* the title of Holy—the Holy Spirit, or the Holy Ghost.

6. Lastly, the Bible doctrine of *the resurrection* serves to elevate our respect for the body. Even in the grave it is guarded and consecrated by Christ. Bereaved friends may rear fences and place beautiful monuments, or scatter flowers and immortelles at the resting-places of their dead; but such tokens of respect for the ashes of the departed are trifling compared to the honour paid to it by Christ. “Thy dead men shall live, together with My dead body shall they arise.”¹ (Isa. xxvi. 19.) “It is sown in corruption, it is raised in incorruption; it is sown in dishonour, it is raised in glory; it is sown in weakness, it is raised in power; it is sown a natural body, it is raised a spiritual body” (1 Cor. xv. 42–44). “He shall change our vile body, that it may be fashioned like unto His glorious body, according to the working whereby He is able even to subdue all things unto Himself” (Phil. iii. 21).

The resurrection of the body.

Thus, whoever they may be who speak slightly of the body, as if regard for its welfare were unbecoming or unworthy of Christians, it is not from the Bible that they take their cue. Nor is the

No lack of regard for the body in the Bible.

¹ Translated by Lowth: “Thy dead shall live; My deceased, they shall arise.”

By Delitzsch: “Thy dead will live; My corpses rise again.”

By Cheyne: “Thy dead shall live; My dead bodies shall arise.”

Christian minister fully discharging his duty who does not take pains on suitable occasions to urge regard for bodily welfare, and attention to the principles which serve to advance it; subject always to the condition, that its claims are not paramount but subordinate, and that its place in the economy of human life is not to rule, but to serve.

II. *Adaptation to Man's Intellectual Nature.*

Religion
a great
intellectual
gymnastic.

IF there were nothing else in our religion fitted to advance our intellectual nature, the great topics with which the Bible is conversant, when taken up earnestly by men, could not fail to bear fruit in this region. God, man, sin, punishment, redemption, propitiation, duty, grace, free-will, infinity, eternity, are fitted, above all other topics, to exercise and strengthen our intellectual powers. Minds occupied with such topics become stronger and deeper; and in grappling with matters too great, in their fullest reach, for their faculties, are led to stretch these faculties to the furthest limit of their power. Of this reflex influence of the grand truths of religion on our intellectual nature we will not say more, as our present subject is the *subordinate* adaptations of the Bible—adaptations more or less apart from its great fundamental purpose. In this restricted sense, we may note

1. *The recognition of Nature in the Bible.* We mean, nature as a fit subject for intellectual exercise, abounding in phenomena that invite investigation, and in spiritual influences, worthy of appreciation and rich in beneficial effect. The interest, beauty, and glory of nature are often set before us in Scripture. "The works of the Lord are great, sought out of all them that have pleasure therein" (Psa. cxi. 2). Our respect is claimed for Solomon, in that "he spake of trees, from the cedar tree that is in Lebanon even unto the hyssop that springeth out of the wall." The whole book of Job encourages and adapts itself to an admiring love of nature,—a calmly intellectual, a gently emotional study of its wonders, including not merely the furniture of our globe, but also the starry heavens. The Psalms and the Prophets present nature to us in her more ideal aspects—the sun as a bridegroom coming out of his chamber, the clouds as Jehovah's chariot, the winds His messengers, the heavens the curtains of His abode. The psalm of the seven thunders, as it has been called—the 29th—represents the various effects of a thunderstorm as utterances of the voice of Jehovah. The apostle finds a very comforting doctrine of theology in the saddest tones of nature—he hears creation groaning; but her groans are not the pains of death, but the pains of birth—the throes and convulsions through which she is giving birth to the new earth, wherein dwelleth righteous-

Recognition
of nature in
the Bible.

Examples.

Ideal aspects
of nature
presented
in the
Psalms and
Prophets.

Symbolism
of nature.

ness (Rom. viii. 22, 23). The same apostle finds in the process by which a grain of wheat passes into a state of dissolution, to reappear in a fuller form of life, an emblem of the resurrection of the body. Among the last of the emblems of the Bible are those in which gold and precious stones and pearls are used to represent the glories of the New Jerusalem.

Bible
recognition
of poetry
and art.

2. The Bible has a benignant aspect toward music, poetry, and the fine arts generally. Music indeed has received the highest consecration in its pages. The harp of David is associated with the holiest fellowship of the soul with God. The union of many voices in song was one of the chief features of that vision of heavenly things and places which John had in Patmos. No Hallelujah Chorus on earth has ever reached the dimensions or the thrilling power of that which the apostle heard, sung by ten thousand times ten thousand, and thousands of thousands.

Poetry.

A vein of poetry runs through the Bible, and some of its finest parts are altogether poetical. We have didactic poetry in Job, lyric in the Psalms, idyllic in the Song of Solomon, descriptive in Isaiah, allegorical in parables like the Prodigal Son, dramatic in the Apocalypse. The study of the Bible is eminently fitted to give a poetical turn to the mind. It leaves its poetical impress alike on high and low. Dante, Spenser, Milton, Klop-

stock drew their highest inspiration from it, and to many other poets it has suggested their finest thoughts. More remarkable, perhaps, is the poetic cast which the Bible gives to common minds. Poetical views of life, as presented in the Bible,—on the one hand, the conflicts of the world, the storms of trial, the wanderings in this weary wilderness; and on the other, the unseen protector, the final victory, the everlasting glory,—have not only taken possession of myriads of devout minds in common life, but have served materially to blunt the edge of pain, to transform the present, and to brighten the future. There are few hearts that are not thrilled by that simple melody:—

“ O God of Bethel ! by whose hand
Thy people still are fed,
Who, through this weary pilgrimage,
Hast all our fathers led.”

In the days of American slavery it was observed that the favourite hymns and songs of the devout negroes borrowed the poetical vein of the Bible, whether they bore on the overthrow of the oppressor, or on the land of rest and peace that awaited the oppressed. If it be one of the highest functions of poetry to bring down through the imagination some rays of brightness to touch up the dreary ways of common life, it must be owned that in this respect the poetry of the Bible has a pre-eminent place.

Poetry of
the common
mind.

Favourite
hymns and
songs of
devout
negro
slaves.

Architec-
ture.

We find nothing in the Bible that bears directly on painting as a fine art. But architecture has a conspicuous place. The temple of Solomon is an object of no small interest, and the minuteness with which its dimensions and other structural features are specified, invests it with peculiar importance. Ezekiel's description of the restored temple indicates the architectural mind. And in the New Testament, though no temple is seen in the New Jerusalem, yet the symmetry, the proportions, and the materials of the city convey the notion of an imposing architecture. In the Bible we are past that period when stateliness of form and beauty of structure have not begun to be thought of; but we are equally far from the time when they are thought of beyond everything else. Whatever importance belongs to them is wholly subordinate: they are nothing, and less than nothing, unless they are subordinate to the great heavenly Temple which is built on the foundation of the apostles and prophets, Jesus Christ Himself being the chief Corner-stone.

Bible re-
cognition of
science and
philosophy.

3. In regard to the bearing of the Bible on science and philosophy, it is true that when these words occur, they are used in a bad sense: science is "science falsely so-called;" and "philosophy" is coupled with vain deceit. But the word rendered science¹ is more correctly

¹ 1 Tim. vi. 20.

rendered "knowledge" in the Revised Version; and the philosophy denounced was a way of philosophizing which was not the handmaid but the rival of the Gospel. The whole style of speculation in those times tended either to corrupt Christianity or to discredit it altogether. Men of scientific and philosophic habit, owning the claims of Christianity as a revelation from heaven, and placing themselves like little children at the feet of Jesus, though not unknown, were far from common. At the same time, it is easy to show that there is nothing in the Bible opposed to science and philosophy in their due place and legitimate purpose. On the contrary, it is certain that the Bible, rightly understood, fosters those habits of mind which lie at the foundation of science and philosophy, namely, a love of order and a spirit of investigation. The Bible quickens the faculties that apprehend abstract truth, and the relations of truth, and furnishes them, as we have seen, with a noble field for exercise. The doctrines of sound philosophy often run parallel to the doctrines of theology. Men can hardly devote themselves to the deeper truths of Scripture without getting on the rails of philosophy. The danger is lest they travel on them too far, and forget that however desirable it may be for certain reasons to get at common principles in order to explain phenomena, natural and spiritual, the great glory of the Gospel lies in its being a simple message—

Corruptions
condemned.

The Bible
quickens the
true organs
of science
and
philosophy.

Yet the Gospel is a simple message.

almost level to the capacity of a child. "This is the record, that God hath given to us eternal life, and this life is in His Son" (1 John v. 11).

III. *Adaptation to Man's Social Nature.*

The family in the Old Testament.

1. CONSPICUOUS under this head is the place in the Bible of the institution which lies at the base of all social prosperity—THE FAMILY. In the Old Testament much is made of the family. In the Ark of Noah, the eight souls saved were a single household. The lives of the patriarchs abound in beautiful glimpses of family life. The filial submission of Isaac; the attachment of Jacob and Rachel; the brotherly forgiveness of Joseph; the noble self-sacrifice of Judah; the beautiful scene at Jacob's death-bed; the exquisite attachment of Ruth and Naomi; the passionate grief of David for Absalom; the loyalty of the Rechabites to their father,—such things, though not unmixed with evil, show how under the Old Testament the family was often the nursery of a singularly pure and beautiful affection. But the New Testament furnishes the ripest and purest pattern of family life. Banishing polygamy, the Gospel promotes that concentration of affection between man and wife, which is the foundation of family unity and attachment. Elevating woman from the place of a slave or subordinate to be the helpmeet

The New Testament furnishes the highest pattern of family life.

of man, it encourages the outflow of all that tenderness of heart which fills the home with sunshine and beauty. The case of Jesus and Mary throws a beautiful halo round the relation of son and mother. Adding the bond of grace to that of nature, Christianity creates a new and closer tie, teaching members of families to long for each other's welfare with yearnings inexpressibly strong. But in this direction the Christian Church has even yet before her a path of almost unbounded progress. Instances of family life of the highest type are not too common, nor can Spitta's eulogy be pronounced over all :

Scope for
progress.

“ O happy house ! O home supremely blest !
 Where Thou, Lord Jesus Christ, art entertained
 As the most welcome and beloved guest,
 With true devotion and with love unfeigned
 Where all hearts beat in unison with Thine,
 Where eyes grow brighter as they look on Thee,
 Where all are ready, at the slightest sign,
 To do Thy will, and do it heartily.”

2. The Bible explicitly and strongly recognizes
 THE STATE. Civil government indeed is placed on
 the highest and firmest basis which it is possible
 for it to occupy—it is consecrated by a Divine
 Charter. The consecration does not extend neces-
 sarily to particular forms of government, nor to
 the individuals who may be in possession : it rather
 has to do with the institution itself. It is not
 merely as a matter of “social contract” that we

The State.

Its Divine
charter.

Benefits of
this recogni-
tion.

are to render to Cæsar the things that are Cæsar's ; we are to do so "for conscience sake." The strong sanction thus given to civil government operates in two ways,—on the side of the rulers and on the side of the ruled. On the side of the rulers, it furnishes a strong motive to just and careful rule, since the sword in their hands has been entrusted to them by God, and ought therefore to be used with a high regard to His will. On the side of the ruled, it supplies a sacred motive to obedience, a motive fed from the deepest fountain of spiritual life. On this basis, a barrier is erected against despotism on the one side, and disorder on the other. Before the eye of the rulers there is set the highest model of a just and beneficent rule—the rule of Him of whom it was said, "He shall judge thy people with righteousness, and thy poor with judgment. . . . He shall deliver the needy when He crieth, the poor also, and him that hath no helper" (Psa. lxxii. 2, 12). No higher principle of law was ever laid down than the Bible rule, "Thou shalt love thy neighbour as thyself." Here we have the germ of a whole code. And more than that, the Gospel guides us to the spirit which alone can secure the end of laws : it gives our neighbour a place in our hearts, for it fills us with longings for his highest good.

Subordinate
conditions of
social well-
being.

3. The Bible recognizes many of *the more subordinate conditions of man's social well-being.*

For illustration of this remark we turn, first of all, to the law of Moses. The social provisions of that law were numerous, varied, and most beneficial. By the general partition of landed property, and its return at the jubilee to the original owners, the citizens received a substantial stake in the community, and a powerful inducement to industry and diligence. The evils of monotony and over toil were checked by the interspersion of frequent holidays with the days of labour; but as most of these holidays were associated with religious service, the tendency to frivolity and dissipation was effectually met. The whole nation was raised to a high moral and intellectual platform by a system, real if not formal, of universal education, in which instruction in God's law held the highest place, and all the lofty and inspiring memories of the past were brought to bear on the young mind at its most susceptible period. Each family was stimulated to self-respect by the careful preservation of its genealogy; incidental cases of poverty were provided with genial alleviations; and the certain prospect of regaining its position within fifty years was held out to every down-broken family. Attention was given to the laws of health through the ceremonial cleansings that were enjoined, applicable both to the person and to the dwelling; for the symbolical, the spiritual, and the sanitary went hand in hand. Never

Provisions
of the
Mosaic Law.

Means of
national
elevation.

Family
stimulus to
self-respect.

Attention to
laws of
health.

Social
effects.

in any constitution, ancient or modern, was so careful provision made for the social department of national welfare : seldom indeed has any express provision been made for it at all. It was doubtless in some degree a fruit of the unexampled excellence of their social system that long after the Hebrew commonwealth was overthrown, the Jewish people continued to possess such extraordinary vitality, and to be marked, so much above other nations, for industry, intelligence, and economy. Alexander the Great found them the best class of colonists for his new cities. Long after the destruction of Jerusalem, beggars, properly speaking, except those afflicted with illness, were unknown in Palestine, and are still little known among the Jews. And the average length of life is to this day greater among the Jews than in other communities. In the social department of life, subordinate though it is, the influence for good of the Mosaic legislation is apparent to this day.¹

New
Testament
sociology.

If now we pass from the Old Testament to the New, we remark that though the latter contains no express social legislation, it silently lays the foundation of social benefits of the highest order. It has been well said by Vinet : " Jesus Christ instituted little, but inspired much." Sometimes it has been made a charge against our Lord that He

¹ See Michaelis' *Commentaries* ; Wines on the *Laws of the Hebrews* ; Edersheim's *History of the Jewish People*.

did not denounce slavery, vile and cruel as the system was under the Romans. But our Lord made it a rule not to denounce directly the social abominations that swarmed around Him. If He had bent His energies in this way, He would only have been putting new patches upon old garments. What our Lord did was to form a new society,—the Christian Church—a society, penetrated by His own spirit of love and goodness, in which He was to live and move, making all things new. He sent forth a spirit that could not fraternize with slavery, nor with the fashionable amusements of the theatre and the circus, nor with the loose *abandon* of fashionable life. The faith that was to overcome the world would overcome its social corruptions too; and the atmosphere which it bred, while it stifled all the offspring of pagan or worldly selfishness, would foster all that was just and generous, lovely, and of good report.

Social cor-
ruptions not
directly
assailed.

A new
society
founded.

The truth of these remarks will become more apparent if we briefly note the bearing of the Gospel, first on social rights; second, on social duties; and third, on social graces.

Social rights
under the
Gospel.

1. SOCIAL RIGHTS. Perhaps the most convenient formula of social right is the French trilogy—Liberty, Equality, Fraternity. These three things are held to be essential conditions of human life. Let us mark how quietly yet effectively the Gospel provides for them in its own way.

Liberty.

Liberty. Under Christ we are bought with a price—His precious blood—and thus we become His property. But He does not treat us as slaves, but as sons; we are not children of the bondwoman, but children of the free. We are *δοῦλοι* (bondmen) yet *ἐλεύθεροι* (free). But the relation in which we stand to Christ is incompatible with the claim of any man to hold us in slavery. No man is entitled in the sight of God to come between my soul and the Saviour who has redeemed it. I have become a member of Christ; who shall hold a member of Christ in bondage? If Paul as a Roman citizen claimed the privileges of a free man, how much more may a member of Christ? This, we say, is the peculiar ground on which the Gospel vindicates our freedom. The Bible does not discuss the question of natural right. That question stands on its own ground. But the Gospel establishes a relation between Christ and every believing man which is simply incompatible with slavery. Slavery and other social corruptions vanish before it, like the mist on the mountains before the summer sun.

Equality.

Equality. Where equality is a reality and a possibility, the Gospel upholds it; where it is a phantom and a folly, it repudiates it. Nothing brings out the essential equality of all men before God so clearly and so powerfully as the Gospel. Its doctrines of sin and grace are very levelling; but while the one levels down, the other levels up.

The
Christian
a bondman
yet free.

Levelling
doctrines.

As sin has wrought a common ruin, so grace has provided a common redemption. There is no royal road to heaven. No man can be saved by being "almost a Christian." The greatest emperor must enter heaven, if he enter it at all, by the same door as the humblest of his menials. Thus far, the Bible teaches equality. But it does not teach equality where equality does not exist and cannot be realized. It does not teach equality of capacity, equality of effort, equality of worth, equality of influence, equality of gifts, or even equality of property. It recognises the distinctions of master and servant, of rich and poor, of wise and foolish, of men who double their talents, and men who tie them up in a napkin. It commends self-denying generosity, like that of the early Christians, as a high attainment of the spirit of brotherhood, but it does not enjoin it. The poor, said Christ, ye will always have with you; and the provision He made for them was a permanent provision, when He gave to his followers the spirit which sees in the poor members of Christ, and helps and blesses them for Jesus' sake.

Does not
extend to
all things.

And this makes true *brotherhood*. The idea which it baffles all the efforts of mere politicians and constitution-mongers to turn into fact, is realized in the Gospel: "One is your Master, even Christ, and all ye are brethren" (Luke xxiii. 8). The Christian society finds room for an idea which

Fraternity

Philemon
and
Onesimus.

Spirit of
fraternity.

Honour all
men.

eludes the grasp of the politician. Paul, writing to Philemon, concerning Onesimus, his runaway slave, who had become a believer in Christ, sends him back, "not now a servant, but above a servant, a brother beloved, both to me, and how much more to thee, both in the flesh, and in the Lord." To carry out the idea of fraternity requires a love and a humility which politics cannot gender, for politics cannot break down the pride and the stiffness of the human heart. "Honour all men" is emphatically a Christian precept.

"Grace," says Archbishop Leighton,¹ "carries still its own worth, though under a deformed body and ragged garments. . . The Jews would not willingly tread on the smallest piece of paper in their way, but took it up, for possibly, said they, the name of God may be on it Trample not on any ; there may be some work of grace there that thou knowest not of. The name of God may be written on that soul that thou treadest on ; it may be a soul that Christ thought so much of as to give His precious blood for it ; therefore despise it not."

Mr. Green's
testimony
to English
Puritanism.

To support our view that true liberty, equality, and fraternity can spring only from Christian soil, let us quote a striking passage from the work of a very able writer who could appreciate well the moral and spiritual forces that enter into the history of men. In his *History of the English People*, Mr. Green thus sums up his estimate of the social influence of Puritanism :—

"Puritanism gave a noble gift to society at large in its conception of social equality. Their common calling, their common

¹ *Commentary*, 1 Peter ii. 17.

brotherhood in Christ annihilated in the minds of the Puritans that overpowering sense of social distinctions which characterized the age of Elizabeth. There was no open break with social traditions ; no open revolt against the social subordination of class to class. But within these forms of the older world, beat for the first time the spirit that was to characterize the new. The meanest peasant felt himself ennobled as a child of God. The proudest noble recognized a spiritual equality in the meanest 'saint.' The great social revolution of the civil wars and the protectorate was already felt in the demeanour of English gentlemen. 'He had a loving and sweet courtesy to the poorest' we are told of one of them, 'and would often employ many spare hours with the commonest soldiers and poorest labourers.' 'He never disdained the meanest, nor flattered the greatest.' But it was felt even more in the new dignity and self-respect with which the consciousness of their 'calling' invested the classes beneath the rank of gentry. Take such a portrait as that which a turner in Eastcheap, Nehemiah Wallington, has left us of a London housewife, his mother. 'She was very loving,' he says, 'and obedient to her parents, loving and kind to her husband, very tender-hearted to her children, loving all that was godly, much disliking the wicked and profane. She was a pattern of sobriety unto many, very seldom seen abroad, except at church; when others recreated themselves at holidays and other times she would take her needlework and say, 'Here is my recreation.'"¹

2. If now we think of *social duties* are they not fully recognised in the New Testament? Does it not rest, as on a great granite floor, on the weighty matters of the law, "judgment, mercy, and faith?" "Putting away lying, speak every man truth with his neighbour, *for we are members one of another.*" "Let him that stole steal no more" (Eph. iv. 25, 28). "Owe no man any thing, but to love one another" (Rom. xiii. 8). "Behold, the hire of the labourers who have reaped down

Social
duties.

¹ *History of the English People*, III. .

your fields, which is of you kept back by fraud, crieth; and the cries of them that have reaped are entered into the ears of the Lord of Sabaoth" (James v. 4).

Christian
habits of
life—In-
dustry.

As to the habits of life by which one is enabled to fulfil one's obligations to society, we find *industry* enjoined; busybodies at Thessalonica, who were above working with their hands, rebuked; and the rule laid down, "If any man will not work, neither shall he eat" (2 Thess. iii. 10). We are to remember our obligation to work for others. "If any provide not for his own, and especially for those of his own house, he hath denied the faith, and is worse than an infidel" (2 Tim. v. 8). *Self-control* is not only enjoined, but linked to the most powerful and persuasive of all Christian experiences: "The grace of God that bringeth salvation hath appeared to all men, teaching us that, denying ungodliness and worldly lusts, we should live soberly, righteously, and godly in this present world; looking for that blessed hope, and the glorious appearing of the great God and our Saviour Jesus Christ; who gave Himself for us, that He might redeem us from all iniquity, and purify unto Himself a peculiar people, zealous of good works" (Titus ii. 11-14).

Self-control.

Social
graces.

3. Lastly, the Gospel is a great nursery of those *social graces* which give to communities their brightest bloom and highest beauty.

“I have always been of opinion,” says Mr. de Liefde, in his preface to *The Charities of Europe*, “that nowhere could a better proof of the divine origin of Christianity, and of the truth of the Gospel be found, than in the story, simply told, of some charitable institutions. Whatever the Christian religion may apparently have, in common with other religions, this much is certain, that true, self-denying charity, which seeks the lost, loves the poor, and consoles the sufferer, is exclusively its own.”

Mr. de.
Liefde's
testimony

That beautiful type of character, of which we have very noble samples in men like John Howard and Stephen Grellet, in missionaries like Williams and Moffat, and in ladies like Elizabeth Fry and Agnes Jones, has shown abundantly the vital connexion of faith and philanthropy. Lives of Christian faith cannot but be followed by labours of Christian love. The Christian spirit is not the spirit of the priest and the Levite, but of the good Samaritan. By a kind of instinct, we claim the name of Christian to denote the character of every enterprise that seeks the rescue of the lost, the recovery of the infirm, the comfort of the wretched. The love of Christ furnishes the impelling motive, and the sense of obligation to Christ sustains the unwearied devotion that turns work however repulsive into an interesting and delightful occupation ; for service is done to Christ when it is done to His poor and needy ones, and it is certain that not even a cup of cold water, given to a disciple in the name of a disciple, shall in any wise lose its reward. However degrading in outward respects such work may be, in Christian eyes it is exalted

Self-denying
philanthro-
pists the
creation of
the Gospel.

Fellowship
with Christ
and
sympathy
with the
angels.

and noble ; for in such service we join hands with Him who came to seek and to save the lost ; and when we succeed, we join hearts and voices with the angels, and share the joy there is in heaven over the sinner that repenteth.

Ultimate
effects of
contact of
the Divine
and human.

This brief survey of Bible teachings, principal and subordinate, may suffice to show that while ample provision is made for the main purpose for which Revelation is given, namely, the remedy of man's rupture with God, it contains numberless other adaptations to the varied nature with which he has been endowed. It serves to build up the fallen tabernacle of humanity, and it helps that process of social development towards higher things which would probably have gone on in the history of the race, if no disturbance had occurred. The primal contact of the divine with the human, besides wonderfully advancing the individual, would have done much to advance the race to new heights of intellectual, moral, and social life. By restoring this contact of the divine and the human, Christianity has again made this progress possible. "Onward and upward" may thus be our motto to the end of time.

POINTS OF CONTACT

BETWEEN

REVELATION AND NATURAL SCIENCE.

BY

SIR J. WILLIAM DAWSON, C.M.G., LL.D., F.R.S.,

President-Elect of the British Association for 1886;

Principal of M'Gill University, Montreal.

AUTHOR OF

'The Chain of Life in Geological Time;' *'The Story of the Earth and Man;'*

'Egypt and Syria: their Physical Features in relation to Bible Teaching;'

'Fossil Men;' etc., etc.



THE RELIGIOUS TRACT SOCIETY:

56, PATERNOSTER ROW; 65, ST. PAUL'S CHURCHYARD; AND

164, PICCADILLY.

Argument of the Tract.

There are many important points in which the history and doctrine of the Word of God come into close contact with the results of modern scientific investigation, or with theories and deductions based on these results; and it often happens, that, owing to want of acquaintance with one or other, well-meaning persons are led to believe that the word and the works of God are at variance with each other. It is the purpose of the present Tract to illustrate the harmony of the two records at their points of contact, and for this purpose the following topics have been selected :

(1) The General Nature of Creation; (2) The Origin and Early History of Man; (3) The Edenic State; (4) Body, Soul, and Spirit; (5) The Fall of Man; (6) The Antediluvians; (7) Primitive Social Institutions; (8) The Origin of Religion; (9) Natural Theology. It is shown that on all of these subjects there is an essential unity in the teaching of Natural Science and that of Revelation.

POINTS OF CONTACT BETWEEN REVELATION AND NATURAL SCIENCE.



THE trite saying that the Bible was not intended to teach science, is one of those superficial truths often used to cover much ignorance. It is no doubt true that in so far as science deals with the proximate causes of natural processes and classifies the objects of nature under general theoretical ideas, it has no connection with the Bible, since the latter refers all to the primary creative cause, and indulges in no theories and makes no formal classifications. On the other hand, no book, not directly relating to physical science, has more frequent reference to natural facts and laws, and commits itself more definitely to certain doctrines as to the origin of the world and things therein. Farther, in so far as science and philosophy deal with origins and historical order, they enter on a field which revelation has to some extent occupied, and this more

The Bible refers all to a primary creative cause.

Frequent reference to natural facts and laws in the Bible.

The Bible deals with origins and historical order.

Unwarrantable use of scientific and philosophical hypotheses.

especially in connection with the origin and early history of man himself. It is also true that when some interpreters of the Bible have ventured to adopt certain scientific and philosophical hypotheses and to connect them with revelation, or when they have undertaken to combat these as opposed to the Word of God, they have often quite unwarrantably established alliances and antagonisms between interpretations more or less accurate of the two records of God in His Word and in His works. On the other hand, many speculations connected with science have been pressed into the service of Atheism and other forms of infidelity. It is the purpose of the present Tract to indicate some of the legitimate points of contact between science and revelation, more especially in relation to questions connected with the history of man as studied by the sciences of geology and archæology.

GENERAL NOTIONS OF CREATION.

The statement of the Bible with reference to creation.

WE may first examine the Biblical doctrine of creation in its relation to scientific fact and theory. The Bible opens with an explicit statement on this subject, which forms the basis of the whole of its subsequent teaching: "In the beginning God created the heavens and the earth." It offers no proof of this statement, but places it before us as an initial dogma, to be accepted by faith without

any direct evidence. Has science anything to say as to our acceptance or rejection of this primary dogma? It can offer no proof or disproof, but can merely inquire if the statement is one admitting of any rational alternative. It is, however, a complex statement, and may be divided into its constituent parts. First, as to a "beginning:"—Can Science regard the duration of the heavens and the earth as infinite? It cannot, for when we interrogate it as to the particular things known to constitute the earth and the heavens, it appears that we can trace all of them to beginnings at more or less definite points of past time. Then as to a producing cause:—If we cannot say that all things have existed from eternity, how did they begin? Science forbids us to say that it was by mere chance, for order and system cannot come of chance, nor has chance the power to initiate anything; and it would be the height of absurdity for investigators occupied solely with the study of causes and effects to admit that the universe is causeless. Nor will science allow us to say that things made themselves, or are their own causes. The only alternative is that they were made by some external power, and any power which could contrive and execute all the complex machinery of the heavens and the earth, or could initiate anything capable of developing such machinery, must be practically

Constituent
parts of the
statement.

A
beginning.

A producing
cause.

The only
alternative.

The
foundation
of a rational
and scientific
Theism laid
in the
Bible.

infinite, and must possess those attributes of superhuman power and superhuman wisdom which belong only to God. Thus the first sentence of the Bible lays the foundation of a rational and scientific Theism, by the statement of a proposition which we must accept, because we cannot rationally substitute anything for it.

If the Bible had opened with the statement, "The heavens and the earth had no beginning;" or, "In the beginning the heavens and the earth were self-created," or, "We cannot know by what power the heavens and the earth were created," the man of science, on reading these words, might indeed have closed the book, saying, it is useless to read any further. At a time when Agnosticism and Materialism claim that they are results of science, it is well for us to note that neither can supply any rational formula to replace this fundamental doctrine of revelation.

The Bible
statement
implies a
personal
creative
will as the
origin of all
things.

But the opening statement of the Bible implies a personal creative will as the origin of all things. Now it so happens that all our own actions and motions, the only things of whose ultimate cause we have any direct knowledge, proceed from this kind of force, this energy of energies, which we call will or volition. Whatever machinery we may discover in muscle or nerve or brain-cell, we come at last to the primary motive-power of will, and we can no more divest ourselves of the belief

of this than of that of our own existence and personality. So in nature, we can see no ultimate cause for anything except an Almighty creative will, and this implies a Person to whom it belongs. Thus the formula "God created" embraces all that science can in the last resort know of the origin of the universe. It is true that science can know this only by analogy, the analogy of the microcosm of man with the macrocosm of the universe, but beyond this analogy it has nothing to say. It is impossible, with reference to this ultimate result of the study of forces, to improve on the words of Sir William Grove, the author of the work which first opened up to the English-speaking world the great doctrine of the correlation of forces. After showing that neither matter nor force can be created or annihilated by us, and that an essential cause is unattainable by physical science, he concludes that "Causation is the will, creation the act, of God."

The formula "God created" embraces all that science can know, in the last resort, of the origin of the universe.

Sir William Grove's statement of the truth.

If we pass from the primary act of creation to consider its order and method, science and sound philosophy may still find themselves in harmony with revelation. The unity of nature as a single harmonious system, regulated in all its parts by definite laws, follows of necessity from our attributing it to the will of one almighty Author, and this grand monotheistic generalization not only dispels the mists and darkness of many

The unity of nature follows from attributing it to one almighty will.

The order of the creative work given in the Bible in harmony with the results of geological investigations.

The powers and agencies concerned in the introduction of animal life.

baneful superstitions, but opens the way for science to enter on the conquest of the material universe. In like manner, the order of that vision of the creative work with which the Bible begins its history, is so closely in harmony with the results worked out by geological investigations, that the correspondences have excited marked attention, and have been justly regarded as establishing the common authorship of nature and revelation. If again we look at the details of the narrative of creation, we shall be equally struck with the manner in which the Bible includes in a few simple words all the leading causes and conditions which science has been able to discover. For example, the production of the first animals is announced in the words, "God said let the waters swarm with swarmers."¹ A naturalist here recognises not only the origination of animal life in the waters, but also three powers or agencies concerned in its introduction, or rather perhaps one power and two conditions of its exercise. First, there are the Divine power and volition contained in the words "God said;" secondly, there is a medium, or environment previously prepared and essential to the production of the result—"the waters;" thirdly, there is the element of vital continuity in the term "swarmers,"—that reproductive element

¹ This is perhaps the best word to express the meaning of the word *Sheretzim*—rapidly multiplying creatures.

which hands down the organism with all its powers from generation to generation, from age to age. If we ask modern science what are the agencies and conditions implied in the introduction on the earth of the multitudinous forms of humble marine life which we find in the oldest rocks, its answer is in no essential respect different. It says that these creatures, endowed with powers of reproduction and possibly of variation, increased and multiplied and filled the waters with varied forms of life; in other words, they were "sheretzim," or swarmers. It further says that their oceanic environment supplied the external conditions of their introduction and continuance, and all the varieties of station suited to their various forms—"the waters brought them forth." Lastly, since biology cannot show any secondary cause adequate to produce out of dead matter even the humblest of these swarmers, it must here either confess its ignorance, and say that it knows nothing of such "abiogenesis,"¹ or must fall back on the old formula, "God said."

The account given by science in no respect different.

Let it be further observed that creation or making, as thus stated in the Bible, is not of the nature of what some are pleased to call an arbitrary intervention and miraculous interference with the course of nature. It leaves quite open the inquiry

Creation no arbitrary intervention and interference with the course of nature.

¹ It is sometimes urged against the idea of creation that it implies abiogenesis or production without previous life. But there must have been abiogenesis at some time, and probably more than once, else no living thing could have existed.

The creative
work part
of Divine
law.

how much of the vital phenomena which we perceive may be due to the absolute creative fiat, to the prepared environment, or to the reproductive power. The creative work is itself a part of Divine law, and this in a threefold aspect: First, the law of the Divine will or purpose; second, the laws impressed on the medium or environment; third, the laws of the organism itself, and of its continuous multiplication, either with or without modifications.

The varying
formulae
used in the
Bible may
imply vary-
ing modes
of intro-
ducing
different
living
beings.

While the Bible does not commit itself to any hypotheses of evolution, it does not exclude these up to a certain point. It even intimates in the varying formulæ "created," "made," "formed," caused to "bring forth," that different kinds of living beings may have been introduced in different ways, only one of which is entitled to be designated by the higher term "create." The scientific evolutionist may, for instance, ask whether different species, when introduced, may not under the influence of environment change in process of time, or by sudden transitions, into new forms not distinguishable by us from original products of creation. Such questions may never admit of any certain or final solution, but they resemble in their nature those of the chemist, when he asks how many of the kinds of matter are compounds produced by the union of simple substances, and how many are elementary and can be no further

decomposed. If the chemist has to recognize say sixty substances as elementary, these are to him manufactured articles, products of creation. If he should be able to reduce them to a much smaller number, even ultimately to only one kind of matter, he would not by such discovery be enabled to dispense with a Creator, but would only have penetrated a little more deeply into His methods of procedure. The biological question is no doubt much more intricate and difficult than the chemical, but is of the same general character. On the principles of Biblical theism it may be stated in this way: God has created all living beings according to their kinds or species, but with capacities for variation and change under the laws which He has enacted for them. Can we ascertain any of the methods of such creation or making, and can we know how many of the forms which we have been in the habit of naming as distinct species coincide with His creative species, and how many are really results of their variations under the laws of reproduction and heredity, and the influence of their surroundings?

The biological question stated on the principles of Biblical Theism.

There can be no doubt that these questions lie at present on the very borders of legitimate science, and that many of the answers which are given to them are rather subjective than based on objective reality.

The evidence of geology in favour of alternate periods of introduction of new forms.

The evidence of geology is altogether in favour of alternate periods of introduction of new forms

The
divergent
views of the
several
schools of
evolutionists
as yet mere
speculations
or infer-
ences.

over great areas in vast numbers, and of periods characterised rather by extinction than renewal, and this in the case of both animals and plants.¹ If this were once distinctly understood, there would be less divergence between theistic evolution and the Biblical record of creation than that which now appears. It cannot however be too strongly insisted on, that the divergent views of the several schools of evolutionists are not definite results of scientific investigation, but to a large extent mere speculations or inferences from facts as yet imperfectly known, which will depend for their acceptance or rejection on discoveries yet to be made.

THE ORIGIN AND EARLY HISTORY OF MAN.²

The
term "pre-
historic"
relative.

WITH reference to the origin and early history of man, the points of contact between the Bible and science have become many and complicated, in consequence of the very important discoveries of the remains of men who lived before the dawn of any secular history. The term "prehistoric" as applied to such men is, of course, altogether relative. In America all is prehistoric before the first voyage of Columbus. In England, all before

"The Chain of Life in Geological Time," "The Story of the Earth," Address by the author at Detroit Meeting of American Association.

² See for more full details on this subject, the Tract of this series on the *Age and Origin of Man*, by Pattison and Pfaff.

Julius Cæsar is prehistoric. In Egypt and the East we have written history that extends beyond the date of Abraham. In the Bible, history extends back to Paradise and to Adam. The prehistoric men of archæology and geology are, however, those known to us only by their remains found in caves and river gravels and similar depositories, and who, whatever their actual ages, have left no written records. The questions of how old they actually are, and how they can be connected with the Biblical history, are those that have established points of contact with revelation. Geology has divided the whole chronology of animal life on the earth into four great periods.¹

The Bible history of man and the prehistoric men of archæology and geology.

In the three first of these periods not only are remains of man absent, but we find no examples of those higher animals which are most nearly related to him in structure. In the geological as in the Biblical record, the lords of creation in those earlier periods were the "swarmers," and the great reptiles. It is, therefore, to the last of these periods, the Tertiary or Kainozoic, that we must look for human remains.

Four periods of animal life according to geology.

Human remains to be looked for in the last.

This, the last of the four great "times" of the earth's geological history, was ingeniously subdivided by Lyell, on the ground of percentages of marine shells and other invertebrates of the sea. According to this method, which, with some modi-

¹ Eozoic, Palæozoic, Mesozoic, and Kainozoic

Lyell's sub
division of
the last of
the four
great
"times" of
the earth's
geological
history.

fications in details is still accepted, the *Eocene*, or dawn of the recent, includes those formations in which the percentage of modern species of marine animals does not exceed $3\frac{1}{2}$, all the other species found being extinct. The *Miocene* (less recent) includes formations in which the percentage of living species does not exceed 35, and the *Pliocene* (more recent) contains formations having more than 35 per cent. of recent species. To these three may be added the *Pleistocene*, in which the great majority of the species are recent, and the *Modern*, in which all may be said to be living. With respect to the higher creatures, the ordinary quadrupeds, such percentages do not apply. These animals begin to appear in the Eocene, but no recent species occur until we reach the later Tertiary or Pliocene. The Eocene thus includes formations in which there are remains of mammals or ordinary land quadrupeds, but none of these belong to recent species or genera, though they may be included in the same families and orders with the recent mammals. This is a most important fact, as we shall see, and the only exception to it is that Gaudry and others hold that a few living genera, as those of the dog, civet, and marten, are actually found in the later Eocene. The Miocene includes formations in which there are living genera of mammals, but no species which survive to the present time. The Pliocene and Pleistocene show living species, though in the

former these are very few and exceptional, while in the latter they become the majority.

With regard to the geological antiquity of man, no geologist expects to find any human remains in beds older than the Tertiary, because in the older periods the conditions of the world do not seem to have been suitable to man, and because in these periods no animals nearly akin to man are known. On entering into the Eocene Tertiary we fail in like manner to find any human remains; and we do not expect to find any, because no living species and scarcely any living genera of mammals are known in the Eocene; nor do we find in it remains of any of the creatures, as the anthropoid apes for instance, most nearly allied to man. In the Miocene the case is somewhat different. Here we have living genera at least, and we have large species of apes; but no relics of man have been discovered, if we except some splinters of flint found in beds of this age at Thenay in France, and a notched rib-bone. Supposing these objects to have been chipped or notched by animals, which is rendered very unlikely by the results of the most recent investigations, the question remains, was this done by man? The probability on general grounds of the existence of men at this period is so small, that Gaudry and Dawkins, two of the best authorities,¹ prefer to suppose that the artificer

The geological antiquity of man.

No human remains in the Eocene period.

¹ "Les Enchainements du Monde Animal;" "Early Man in Europe."

Miocene
man im-
probable.

was one of the anthropoid apes of the period. It is true that no apes are known to do such work now; but then other animals, as beavers and birds, are artificers, and some extinct animals possessed higher powers than their modern representatives. But if there were Miocene apes which chipped flints and cut bones, this would, either on the hypothesis of evolution or that of creation by law, render the occurrence of man still less likely than if there were no such apes. For these reasons neither Dawkins nor Gaudry, nor indeed any geologists of authority in the Tertiary fauna, believe in Miocene man.

In the Pliocene, as Dawkins points out, though the facies of the mammalian fauna of Europe becomes more modern, and a few modern species occur, the climate becomes colder, and in consequence the apes disappear, so that the chances of finding fossil men are lessened rather than increased, in so far as the temperate regions are concerned. In Italy, however, Capellini, has described a skull, an implement, and a notched bone, supposed to have come from Pliocene beds, and which are preserved in the Museum of Florence. They are all, however, of so recent types that it is in every way likely they have become mixed with the Pliocene stuff by some slip of the ground. As the writer has elsewhere pointed out¹

Human
remains
supposed to
have been
found in
Pliocene
beds have
probably
come there
by some
slip of the
ground.

¹*Fossil Men*, 1880.

similar and apparently fatal objections apply to the skull and implements alleged to have been found in Pliocene gravels in California. Dawkins further informs us that in the Italian Pliocene beds supposed to hold remains of man, of twenty-one mammalia whose bones occur, all are extinct species except possibly one, a hippopotamus. This of course renders very unlikely in a geological point of view the occurrence of human remains in these beds, and up to this time no such discovery has been certainly established.

In the Pleistocene deposits of Europe—and this applies also to America—we for the first time find a predominance of recent species of land animals. Here, therefore, we may look with some hope for remains of man and his works, and here, accordingly, in the later Pleistocene or early Modern, they are actually found. When we speak, however, of Pleistocene man, there arise questions as to the classification of the deposits, which it seems to the writer that some of the leading geologists have not answered in accordance with geological facts, and a misunderstanding as to which may lead to serious error.

The Pleistocene deposits of Europe.

The geological formations of the Pleistocene period are, for the most part, superficial gravels and clays, and deposits in caverns, and it is somewhat difficult, in many cases, to ascertain their relative ages. We are aided in this, however, by certain

Geological formation of the Pleistocene period.

The
continental
period of
the Pleisto-
cene.

The glacial
period.

Second con-
tinental
period.

Chrono-
logical
table.

ascertained facts as to elevations and submergences of the land, and as to climatal conditions in the northern hemisphere. There was at the beginning of the Pleistocene what has been called a continental period, when the land of the northern hemisphere was more extensive than now, and there seems to have been a mild climate. This was succeeded by a period of cold, the so-called glacial period, in which the land became diminished in extent by submergence, and the climate became so severe that snow and ice prevailed over nearly all the temperate regions of Europe, Asia, and North America. After this there was a second continental period of mild climate, succeeded by another submergence of limited duration, and then the continents acquired the forms which they still retain. These chronological points, important in reference to the correlation of geology and the Bible, are represented in the following table:—

The Pleistocene and Modern in the Northern Hemisphere with reference to the Introduction of Man.

(In descending order from newer to older.)

Modern, or Period of Man and Modern Mammals:—

Recent Age.—Continents at or nearly at their present levels.—

Existing races of men and living species of mammals in Europe.

Post-glacial or Second Continental Age.—Land more extensive than now. Climate temperate. Man represented in Europe and Western Asia by races now extinct, and contemporary with the mammoth and other great mammals also extinct,

but also with modern species. This was terminated by a submergence fatal to men and many mammalia, and covering the land with gravel and silt.

Pleistocene, or Period of extinct and a few recent Mammals :—

Later Pleistocene, or Glacial Age.—Cold climate and great submergence of land in northern hemisphere.

Early Pleistocene or *First Continental Age*.—Land very extensive, and inhabited by many mammals now extinct. Climate temperate.

It will be observed, with reference to the above table, that the earliest certain indications of man belong to the modern period alone, and that this modern or human period is divided into two portions by a great submergence, in which certain races of men and many mammals perished, and after which the geographical conditions of the northern hemisphere were considerably modified. I have not used the terms historic and pre-historic in the above table, because, while in most countries the period of written history covers only a locally variable part of the recent age, in other countries it extends back into the post-glacial, which thus becomes the antediluvian period. I have, however, elsewhere proposed the name Palæocosmic for the men of the post-glacial age, and Neocosmic for the men of the recent ages, and shall use these terms rather than Palæolithic and Neolithic, since these last refer to forms of implements which, though locally of great antiquity, exist in some places up to the present day. The men of

Earliest indications of man.

the post-glacial age have also been called men of the gravels and caves, and the men of the mammoth and reindeer ages, and they resemble in physical features the modern Turanian races of Northern Europe, Asia, and America. We might, with reference to the Bible history, call them antediluvian men, but the evidence of this will appear in the sequel. In the meantime we may observe that the testimony of the earth coincides with that of the Bible, in representing man as the latest member of the animal kingdom, the last-born of animals.

The testimony of the earth and the testimony of the Bible coincide in representing man as the last-born of the animals.

The most important point with reference to any parallelism between the geological history of man as tabulated above, and the Biblical record, is to ascertain what absolute value in time can be assigned to the several ages known as post-glacial and recent, or, in other words, how long ago it is since the glacial period terminated. So vague are the data for any calculation of this kind, that the estimates of the date of the glacial period have ranged from hundreds of thousands of years down to a very few thousands. The tendency of recent investigations has been to discard the higher estimates and to bring the close of the glacial age constantly nearer to the present time. The absence of any change in invertebrate life, the small amount of erosion that has occurred since the glacial age, and many

The tendency of recent investigations to bring the close of the glacial age nearer to our own time.

other considerations, have been tending in this direction. I may refer to only one criterion, the importance and availability of which were long ago recognised by Sir Charles Lyell. This is the recession of the Falls of Niagara, from the shores of Lake Ontario to their present position. This recession is effected by the cutting back of beds of limestone and shale; and the resulting gorge, about seven miles in length, cuts through the deposits of the glacial period, proving, what on other grounds would be obvious, that the cutting began immediately after the glacial age. When Lyell estimated the time required, the rate of recession of the Fall was supposed to be one foot per annum. It is found, however, by the results of actual surveys¹ to be three feet annually. Lyell's estimate of the time required was thirty thousand years. The new measurements reduced this to one third, and further abatements are required by the possibly easier cutting of the first part of the gorge, by the fact that a portion of it of uncertain amount above the "whirlpool," had been cut at an earlier period and needed only to be cleared out, and by the probability that, in the early post-glacial period there was more water in the Niagara river than at present. We thus have physical proof that the close of the glacial submergence and re-elevation of the American land

The recession of the Falls of Niagara.

Lyell's estimate of the time required.

The new measurements.

The close of the glacial submergence and re-elevation of American land.

¹ Report of the Geodetic Surveys of the State of New York.

The ordinarily received chronology of the post-diluvian period all that geology can allow for the existence of man in the temperate regions of the northern hemisphere.

could not have occurred more than about eight thousand years ago. It follows that the ordinarily received chronology of about four or five thousand years for the post-diluvian period, and two thousand or a little more for the antediluvian period, will exhaust all the time that geology can allow for the possible existence of man, at least in the temperate regions of the northern hemisphere. Facts recently ascertained with reference to the delta of the Nile,¹ lead to similar conclusions for the oldest seats of human civilisation. Whatever demands may be made by philologists, historians, or antiquaries, or by the necessities of theories of evolution, must now be kept within the limits of facts such as those above referred to, and which are furnished to us by physical geography and geology. These facts must also lead to considerable revision of the excessive uniformitarianism of one school of English geologists, and to explanations more reasonable than some which have been current as to the deposition and age of superficial gravels and similar deposits. When all these points have been adjusted, it will be found that there is a sufficiently precise accordance between science and Bible history with regard to the antiquity and early history of man.

The accordance between science and Bible history with regard to the antiquity and early history of man.

¹ "Egypt and Syria," in *Bypaths of Bible Knowledge*.

THE EDENIC STATE OF MAN.

PERHAPS no portion of Bible history seems to have been more thoroughly set at naught by modern scientific speculations than the golden age of Eden, so dear to the imagination of the poet, so interwoven with the past condition and future prospects of man, as held by all religions. It can easily be shown, however, that there are important points of agreement between the simple story of Eden, as we have it in Genesis, and scientific probabilities as to the origin of man. Let us glance at these probabilities.

The Bible story of Eden and scientific probabilities as to the origin of man.

We have already seen that man is a recent animal in our world. Now, under any hypothesis as to his origin, the external conditions must have been suitable to him before he could appear. If, to use the terms of evolutionary philosophy, he was a product of the environment acting on the nature of a lower animal, this would be all the more necessary. Further, it would be altogether improbable that these favourable conditions should prevail at one time over the whole world. They must, in the nature of things, have prevailed only in some particular region, the special "centre of creation" of man; and this, whether its conditions arose by chance, as certain theorists would have

Favourable conditions for man's appearance necessary.

Science not
inconsistent
with
Scripture
statement.

us believe, or were divinely ordained, must have been to the first men the Eden where they could subsist safely when few, and whence they could extend themselves as they increased in numbers. There is, therefore, in science nothing inconsistent with the Scripture statement that God "prepared a place for man."

The account
in Genesis
in accordance
with the require-
ments of
the case.

Further, no one supposes that man appeared at first with weapons, armour, and arts full-blown. He must have commenced his career naked, destitute of weapons and clothing, and with only such capacities for obtaining food as his hands and feet could give him. For such a being it was absolutely necessary that the region of his *début* should furnish him with suitable food, and should not task his resources as to shelter from cold or as to defence from wild animals. The statements in Genesis that it was a "garden," that is, a locality separated in some way from the uninhabited wilderness around; that it was stocked with trees pleasant to the sight and good for food; and that man was placed therein naked and destitute of all the arts of life, to subsist on the spontaneous fruits of the earth, are thus perfectly in accordance with the requirements of the case.

If we inquire as to the portion of the world in which man at first appeared, the theory of evolution advises us to look to those regions of the world in which the lowest types of men now exist

or recently existed, as Tasmania, Tierra del Fuego, and the Cape of Good Hope, or it assures us that those tropical jungles which now afford congenial haunts for anthropoid apes, but are most unsuitable for the higher races of men, are the regions most likely to have witnessed the origin of man. But this is manifestly absurd, since, in the case of any species, we should expect that it would originate where the conditions are most favourable to the existence of that species, and not in those regions where, as shown by the result, it can scarcely exist when introduced. We should look for the centre whence men have spread, to those regions in which they can most easily live, and in which they have most multiplied and prospered. In historical times these indications, and also those of tradition, archæology, and affiliation of languages and races, point to Western Asia as the cradle of man. Even Haeckel in his *History of Creation*, though it is convenient, in connection with his theoretical views, to assume for the origin of man a continent of "Lemuria" now submerged under the Indian Ocean, traces all his lines of affiliation back to the vicinity of the Persian Gulf, in the neighbourhood of the districts to which the Bible history restricts the site of Eden. Wallace has shown that considerations of physical geography render it in the highest degree improbable that any such continent in the Indian Ocean ever existed, so that Haeckel's

The suggestions of the theory of evolution as the locality of man's appearance absurd.

All indications point to Western Asia as the cradle of man.

map of the affiliation of man actually accords with the statements of the Pentateuch, except in an extension of the lines of descent southward which science refuses to grant to him.

Changes
connected
with the
fall of man.

Again, there is reason to believe that, at the fall of man, climatic, or other changes, expressed by the "cursing of the ground," occurred, and that in the Edenic system of things very large portions of the earth were to be or become suitable to the happy residence of man. Geology makes us familiar with the fact that such changes have occurred in the latter half of the Tertiary period, to such an extent that at one time the plants of warm temperate regions could flourish in Spitzbergen, and at another ice and snow covered the land far into temperate latitudes. Further, it would seem that the oldest men known to us by archæological discoveries, and who are probably equivalent to the later Antediluvians, lived at a time of somewhat rough and rigorous climate,—a time when the earth was cursed with cold and with physical vicissitudes, and which probably succeeded a more favourable period in which man appeared.

No necessity
for giving
up the story
of Eden.

Thus it would seem that we are not under any scientific necessity to give up the old and beautiful story of Eden, and that on the contrary, this better accords with the probabilities as to the origin of man than do those hypotheses of his derivation which have been avowedly founded on scientific considerations.

BODY, SOUL, AND SPIRIT.

IN Genesis man has the dignity of being represented as a special creation, and this arises, not from anything in his merely bodily or physical constitution, but from that higher spiritual and rational nature said to have been conferred on him by the special inbreathing or inspiration of God. It is this which makes him the "shadow and likeness" of God, and fits him for being the lord of the earth. It would be easy to show that this spirit as distinguished from mere animal life or soul, the "inspiration of the Almighty" as Job calls it, is constantly referred to in the Hebrew Scriptures, but it has its most clear development in the New Testament. Every thoughtful reader of the Gospels and the Epistles in the original must have noticed the peculiar use of the words "flesh," "soul or life," and "spirit,"¹ and of the adjectives derived from them, and must have perceived that these terms are used in constant and definite senses, though there are of course some exceptional and figurative employments of them, and cases where one of the terms implies another not mentioned.² He may have regarded this classification as expressing definite ideas of the writers as to a three-fold constitution

Man a special creation.

New Testament terms relating to the constitution of man.

The formula "Body, soul, and spirit."

¹ Σάρξ, ψυχή, πνεῦμα.

² We have also, "Body (σῶμα), soul, and spirit," 1 Thess. v. 23.

Points of
contact
between
modern
science and
the Biblical
view of
man.

of human nature, as merely arbitrary and accidental, or as conforming to a classification current at the time. In either of these cases he may have felt some interest in comparing it with the arrangements of modern psychology. Yet in such comparison he will have found little satisfaction, unless he turns to that reaction of physiology upon mental science which is so influential in our day; but here, if I mistake not, he will find some curious points of contact between modern science and the Biblical view of humanity. In making this comparison, we must refer, for the Biblical distinction of body, soul, and spirit, and for the conditions under which an eternal life is affirmed to be possible for all three, to the New Testament itself, and to the numerous theological writers who have discussed the subject.

The in-
fluence of
physiolog-
ical facts on
our views.

Hitherto it has been somewhat difficult to bring this Biblical psychology, if it may be so called, into harmony with the mental science of the schools. But any one who has read Calderwood's recent work, *The Relations of Mind and Brain*,¹ must be aware that physiological facts relating to the organism, the "flesh" of the New Testament, are beginning very seriously to modify our views. We now know that the grey cellular matter of the brain constitutes a reservoir of sensory and motor energy, which supplies the power necessary to

The grey
cellular
matter of
the brain
a reservoir
of sensory
and motor
energy.

¹ London, 1879.

place us in relation with things without, and to impress, by means of muscular effort, our own power on the outer world. Further, there seems the best reason to believe that the mass of the brain is directly connected with sensation and motion, though there seem to be means of regulation and co-operation of sensations and actions in connection with the front and back portions of the cerebral hemispheres. There are facts indicating that the anterior portions of the hemispheres are the organs of a certain determining and combining property of the nature of animal intelligence, and that the posterior portions, in association with the sympathetic nerve, are connected with the affections and passions.¹ Now all this belongs, in the first instance, to living nerve matter, and is possessed by man in common with animals. They, like us, can perform reflex or automatic actions, altogether or partially involuntary. They, like us, can perceive and reflect, and have affections, passions, and appetites. Even in animals this supposes something beyond the mere organism, and which can combine and compare sensations and actions. This is the animal or psychical life, which, whatever its essential nature, is something above and

The mass of the brain connected with sensation and motion.

All this belongs to man in common with animals.

¹ It is a very old and in some respects well-founded notion that the viscera are connected with the affections. We now know something of the relation of these to the sympathetic nerve system, and to the posterior portion of the cerebral lobes. Ferrier, Calderwood, and very recently Bucke, have discussed these points.

Man has
other and
higher
powers.

beyond mere nerve-power, though connected with it and acting by means of it. But in man there are other and higher powers, determining his conscious personality, his formation of general principles, his rational and moral volitions and self-restraints. These are manifestations of a higher spiritual nature, which constitutes in man the "image and shadow of God."

Thus the physiologist may fairly claim, not for protoplasm as such, but for the living organism, all the merely reflex actions, as well as the appetites and desires, and much that belongs to perception and ordinary intelligence. These may be regarded as bodily and psychical in the narrow sense. But the higher regulating powers belong to a spiritual domain into which he cannot enter.

Tyndall's
admission.

Huxley.

Spencer.

It is interesting to observe here that even those who seem most desirous to limit the powers of man to mere properties of the living organism are prevented by their own consciousness, as well as by scientific facts, from fully committing themselves to this. Tyndall admits the existence of a "chasm" "intellectually impassable" between physical facts and human consciousness. Huxley's human automaton is a "conscious automaton," and in some sense "endowed with free will," and he declines to admit that he will ever be proved to be only "the cunningest of nature's clocks." Spencer and writers of his school have made similar ad-

missions. There are, it is true, extreme writers like Buchner, with whom matter is the origin and essence of all that exists, but their strong assertions of this, being destitute of proof, can scarcely be held to be scientific.

Extreme position of Buchner.

At present no doubt this whole subject is as a department of science somewhat crude and rudimentary, and it becomes us to speak with some reserve respecting it, but the drift of opinion is in the direction above indicated. It has become evident that the more recent discoveries as to the functions of brain will not warrant the extreme views of materialists, while on the other hand they serve to correct the doctrines of those who have run into the opposite extreme of attaching no importance to the fleshly organism and its endowment of animal life. In like manner, these discoveries are tending to establish definite boundaries between the domain of mere automatism and that of rational will. In so far as these results are attained, we are drawn more closely to that middle ground occupied by the New Testament writers, and which, without requiring us to commit ourselves to any new hypotheses or technical distinctions, gives a fair valuation to all the parts of the composite nature of man. The practical value of this Bible philosophy is well known. It relegates to their proper place the merely somatic and psychical elements of our nature, admits their

Recent discoveries as to the functions of the brain will not warrant the extreme views of materialists.

They tend to define the boundaries between mere automatism and rational will.

The practical value of the Bible philosophy.

What
Bible philo-
sophy aims
at.

The prospect
it holds
forth.

value in that place, and condemns them only when they usurp the position of the higher determining powers. It seeks to place these last in their true relation to our fellow-men and to God, and to provide for their regulation under God's law and the guidance of His Spirit, with the object of securing a true and perfect equilibrium of all the parts of our nature. It is thus enabled to hold forth a prospect of eternal life, peace, and happiness to body, soul, and spirit, and to point out the meaning and the value of the conflicts which rage within the man in our present imperfect state. This practical object, in connection with the mission of the Saviour, is what the New Testament has in view ; but in arriving at this, it has undoubtedly pointed to the solutions of the mysteries of our nature at which science and philosophy are beginning to arrive by their own paths ; just as, in another department, the Bible has shadowed forth the great principles and process of creation in advance of the discoveries of geology.

THE FALL OF MAN.

THE fall of man presents itself as a serious question in the study of nature, as well as in theology. When we consider man as an improver and innovator in the world, there is much

that suggests a contrariety between him and nature, and that instead of being the pupil of his environment he becomes its tyrant. In this aspect man, and especially civilized man, appears as the enemy of wild nature, so that in those districts which he has most fully subdued, many animals and plants have been exterminated, and nearly the whole surface has come under his processes of culture, and has lost the characteristics which belonged to it in its primitive state. Nay more, we find that by certain kinds of so-called culture, man tends to exhaust and impoverish the soil, so that it ceases to minister to his comfortable support, and becomes a desert. Vast regions of the earth are in this impoverished condition, and the westward march of exhaustion warns us that the time may come when, even in comparatively new countries like America, the land will cease to be able to sustain its inhabitants. We know also from geology that the present state of the physical world is not the best possible for man ; and that its climatic conditions, in the middle Tertiary for example, have been much better than at present.

Contrariety
between
man and
nature.

What
geology
teaches of
the present
state of the
physical
world.

Here there rises before us a spectre which science and philosophy often appear afraid to face, and which asks the dread question, What is the cause of the apparently abnormal character of the relations of man and nature? In attempting to solve this question, we must admit that the position of

The cause
of the
abnormal
relations of
man and
nature.

man even here is not without natural analogies. The stronger preys upon the weaker, the lower form gives place to the higher, and in the progress of geological time old species have died out in favour of newer, and old forms of life have been exterminated by later successors. Man, as the newest and highest of all, has thus the natural right to subdue and rule the world. Yet there can be little doubt that he uses this right unwisely and cruelly, and these terms themselves explain why he does so, because they imply freedom of will. Given a system of nature destitute of any being higher than the instinctive animal, and introduce into it a free rational agent, and you have at once an element of instability. So long as his free thought and purpose continue in accord with the arrangements of his environment, so long all will be harmonious; but the very hypothesis of freedom implies that he can act otherwise, and so perfect is the equilibrium of existing things, that one wrong or unwise action may unsettle the nice balance, and set in operation trains of causes and effects producing continued and ever-increasing disturbance. This "fall of man" we know as a matter of observation and experience has actually occurred, and its only natural remedy would be to cast man back again into the circle of merely instinctive action, or to carry him forward, until by growth in wisdom and knowledge he should again

Freedom of will an element of instability.

Man has actually fallen.

be fitted to be the lord of creation. The first method has been proved unsuccessful by the rebound of humanity against all the attempts to curb and suppress its liberty. The second has been the effort of all reformers and philanthropists since the world began; but its imperfect success affords a strong ground for clinging to the Theistic view of nature, for soliciting the intervention of a Power higher than man, and for hoping for a final restitution of all things through the intervention of that Power. Mere materialistic evolution must ever and necessarily fail to account not only for the higher nature of man, as well as his disharmony with other parts of nature, and for his moral aberrations. These only come rationally into the system of nature under the supposition of a higher Intelligence, from whom man emanates, and whose nature he shares.

The intervention of a higher power to remedy the fall needed.

But on this Theistic view we are introduced to a kind of unity and of evolution for a future age, which is the great topic of revelation, and is not unknown to science and philosophy, in connection with the law of progress and development deducible from the geological history, in which an ascending series of lower animals culminates in man himself. Why should there not be a new and higher plane of existence to be attained to by humanity—a new geological period, so to speak, in which present anomalies shall be corrected, and the grand unity

What the theistic view introduces us to.

St. Paul's
anticipation.

of the universe and its harmony with its Maker fully restored? This is what Paul anticipates when he tells of a "pneumatical" or spiritual body to succeed to the present natural or "psychical" one, or what Jesus Himself tells us when He says that in the future state we shall be like to the angels.

Angels
conceivable.

Angels are not known to us as objects of scientific observation, but such an order of beings is quite conceivable, and this not as supernatural, but as part of the order of nature. They are created beings like ourselves, subject to the laws of the

Their con-
stitution and
powers.

universe, yet free and intelligent and liable to error, in bodily constitution freed from many of the limitations imposed on us, mentally having higher range and grasp, and consequently masters of natural powers not under our control. In short, we have here pictured to us an order of beings forming a part of nature, yet in their powers as miraculous to us as we might be supposed to be to lower animals, could they think of such things.

Part of
nature.

They bridge
over the
gulf between
humanity
and Deity.

This idea of angels bridges over the otherwise impassable gulf between humanity and deity, and illustrates a higher plane than that of man in his present state, but attainable in the future. Dim perceptions of this would seem to constitute the substratum of the ideas of the so-called polytheistic religions. Christianity itself is in this aspect not so much a revelation of the supernatural as the highest bond of the great unity of nature. It

Christianity
the highest
bond of the
unity of
nature.

reveals to us the perfect Man, who is also one with God, and the mission of this divine man to restore the harmonies of God and humanity, and consequently also of man with his natural environment in this world, and with his spiritual environment in the higher world of the future. If it is true that nature now groans because of man's depravity, and that man himself shares in the evils of this disharmony with nature around him, it is clear that if man could be restored to his true place in nature he would be restored to happiness and to harmony with God; and if, on the other hand, he can be restored to harmony with God, he will then be restored also to harmony with his natural environment, and so to life, and happiness, and immortality. It is here that the old story of Eden, and the teaching of Christ, and the prophecy of the New Jerusalem strike the same note which all material nature gives forth, when we interrogate it respecting its relations to man. The profound manner in which these truths appear in the teaching of Christ has perhaps not been appreciated as it should, because we have not sought in that teaching the philosophy of nature which it contains. When He points to the common weeds of the fields, and asks us to consider the garments more gorgeous than those of kings in which God has clothed them, and when He says of these same wild flowers, so daintily made by the supreme Artificer, that to-day

What it
reveals to
us.

The restor-
ation of
man and
its effects.

The philo-
sophy of
nature in
Christ's
teaching not
sufficiently
appreciated.

they are, and to-morrow are cast into the oven, He gives us not merely a lesson of faith, but a deep insight into that want of unison which, centering in humanity, reaches all the way from the wild flower to the God who made it, and requires for its rectification nothing less than the breathing of that Divine Spirit which first evoked order and life out of primæval chaos. When He points out to us the growth of these flowers without any labour of their own, He in like manner opens up one of the most profound analogies between the growth of the humblest living thing and that of the new spiritual nature which may be planted in man by that same Divine Spirit.

ANTEDILUVIANS.

The
Noachian
deluge
a fact of
ancient
Assyrian
history.

THE deluge of Noah has ceased to be a matter solely theological or dependent on the veracity of Genesis. It has now become a fact of ancient Assyrian history, a tradition preserved by many and various races, a pluvial or diluvial age, or time of subsidence, intervening between the oldest race of men known to geology and modern times. We are at least entitled, conjecturally, to identify these things, and through means of these identifications to arrive at some definite conceptions of the condition and character of the earliest men, whether we call them the Antediluvians of the Bible, or the Palæocosmic or Palæolithic men of geology.

The Book of Genesis traces man back to Eden, the characteristics of which we have already considered, and which is placed by that old record, as by the Assyrian genesis, in the Euphratean valley, whether in its upper table-lands or in its delta. From this Eden man was expelled, the old Aryan traditions say by physical deterioration—the incoming, perhaps, of a later glacial age. The Semitic traditions, on the other hand, refer it to a moral fall and a judicial visitation of God. In any case it was a very real evil, involving a change from that condition of happy abundance and freedom from physical toil, which all histories and hypotheses as to human origin must assign to the earliest state of our species, to a condition of privation, exposure, labour, struggle for existence against the uncongenial environment of a wilderness world. Such new conditions of existence must have tended to try the capabilities and endowments of men. Under certain circumstances, and when not too severe, they must have developed energy, inventiveness, and sagacity, and thus may have produced a physical and mental improvement. Under other circumstances they must have had a deteriorating influence, degrading the physical powers and reducing the mental nature almost to a bestial condition. The experience of our modern world, and even of civilized communities, enables us too well to comprehend these opposite effects.

Expulsion
from Eden.

Aryan
traditions.

Semitic
traditions.

Effects of
the new
conditions
of existence.

In any case, such struggle was, on the whole, better for man when in an imperfect state. Only a creature perfectly simple and harmless morally, could enjoy with advantage the privileges of an Eden.

Division of
the human
family into
two tribes.

The Bible story, however, gives us a glimpse of still another and unexpected vicissitude. The human family at a very early period split into two tribes. One of these, the Sethidæ, simple, God-fearing, conservative, shepherds and soil-tillers; the other, the Cainidæ, active, energetic, godless, city-builders and inventors. Among the Cainidæ sprang up another division into citizen peoples, dwelling in dense communities, practising metallurgy and other arts, inventing musical instruments, and otherwise advancing in material civilisation; and wandering Jabalites—nomads with movable tents, migrating widely over the earth, and perhaps locally descending to the rudest forms of the hunter's life. Thus from the centre of Eden and the fall sprang three diverse lines of human development.

Division of
the Cainidæ.

Intermar-
riages

But a time came when these lines reacted on each other. The artisans and inventors intermarried with the simple country folk. The nomadic tribes threw themselves in invading swarms on the settled communities. Mixed races arose, and wars, conquests, and disturbances, tending to limit more and more the areas of peace and

of plenty, and to make more and more difficult the lives of those who sought to adhere to the old Edenic simplicity ; until this was well-nigh rooted out, and the earth was filled with violence. In the midst of this grew up a mixed race of men, strong physically, with fierce passions, daring, adventurous, and cruel, who lorded it over the earth, and deprived others of their natural rights and liberties—the giants and men of renown of antediluvian times, the “Nephilim” of the Bible, the demigods and heroes of many ancient idolatries.

The rise of
a mixed
race of men.

Their cha-
racteristics
and exploits.

Such, according to the Bible, was the condition of the later antediluvians, and in this was the reason why they were swept away with a flood. Before this catastrophe, we can gather from the story, there must have been great progress in the arts. Intellects of gigantic power, acting through the course of exceedingly long lives, had gained great mastery over nature, and had turned this to practical uses. There must have been antediluvian metallurgists as skilled as any of those in early post-diluvian times ; engineers and architects capable of building cities, pyramids, and palaces, and artisans who could have built triremes equal to those of the Carthaginians. At the same time there must have been wild outlying tribes, fierce and barbarous. Farther, the state of society must have been such that there was great pressure for the

Progress.

State of
society.

Change of
climate in
later ante-
diluvian
days.

means of subsistence in the more densely peopled districts ; and as agricultural labour was probably principally manual, and little aided by machines or animals, and as the primitive fertility of the soil must, over large regions, have been much exhausted, we can understand that lament of Lamech as to the hardness of subsistence with which he precedes his hopeful prophecy of better times in the days of Noah.¹ Certain geological facts also give us reason to suspect that in the later part of the antediluvian period, the climate of the northern hemisphere was undergoing a gradual refrigeration.²

The godless
and mater-
ialistic
character of
the time.

Another feature of the antediluvian time was its godless and materialistic character. This is quaintly represented in some of the American legends of the deluge, by the idea that the antediluvian men were incapable of thanking the gods for the benefits they received. They had, in short, lost the beliefs in a ruling divinity and a promised Saviour, and had thrown themselves wholly into a materialistic struggle for existence, and this was the reason why they were morally and spiritually hopeless and had to be destroyed. We do not hear of any idolatry or superstition in antediluvian times, nor of the lower vices of the more corrupt

¹ Gen. v. 29.

² This was certainly the case if the later Antediluvian age is the same with that of men of the "Rein-deer age" in Europe.

and degraded races. The vices of the antediluvians were those of a superior race, self-reliant, ambitious, and selfish. Devoting themselves wholly to secular aims and to the promotion of the arts of life, and utilizing to the utmost the bounties of nature, their motto was "let us eat and drink," not for to-morrow we die, but because we shall live long in our enjoyments. The inevitable result in the tyranny of the strong over the weak, and the rebellion of the weak against the strong, in the accumulation of wealth and luxury in favoured spots, and in the desolation of those spots by the violence and rapacity of rude and warlike tribes, came upon them to the full, but brought no repentance. Such a race, to whom God and the spiritual world had become unthinkable, to whom nothing but the material goods of life had any reality, who probably scoffed at the simple beliefs of their ancestors as the dreams of a rude age, had become morally irredeemable, and there was nothing in store for it but a physical destruction.

The vices
of the ante-
diluvians.

The race
had become
morally
irredeem-
able.

The cataclysm by which these men were swept away may have been one of those submersions of our continents which, locally or generally, have occurred over and over again, almost countless times, in the geological history of the earth, and which, though often slow and gradual, must in other cases have been rapid, perhaps much more so than

the hundred and twenty years which the Bible record allows us to assign to the whole period of the Noachic catastrophe.¹

The ancient cave-men seem to resemble the ruder antediluvians.

It is an interesting fact that those ancient cave-men, whose bones testify to the existence of man in Europe before the last physical changes of the post-glacial age, and while many mammals now locally or wholly extinct still lived in Europe, present characters such as we might expect to find at least in the ruder nomadic tribes of the antediluvian men. Their large brains, great stature, and strong bones point to just such characters as would befit the giants that were in those days. It is farther of interest that though no relics of civilized antediluvians have yet been discovered, the early appearance of skill in the arts of life in the valleys of the Euphrates and Nile in post-diluvian times, points to an inheritance of antediluvian arts by the early Hamitic or Turanian nations, and is scarcely explicable on any other hypothesis.

Indications of an inheritance of antediluvian arts in Hamitic and Turanian nations.

The question of a possible relapse of the world into the antediluvian condition.

It is a question, raised by certain expressions of Scripture, whether the world will again fall into the condition in which it was before the flood. "As it was in the days of Noah," we are told, so shall it be when the Son of Man comes to judgment. To bring the world into such a state it would require that it should shake off all the superstitions, fears, and religious hopes which now affect

¹ Gen vi. 3, and 1 Pet. iii. 20.

it; that it should practically cast aside all belief in God, in morality, and in the spiritual nature and higher destiny of man; that it should devote itself wholly to the things that belong to the present life, and in the pursuit of these should be influenced by nothing higher than a selfish expediency. Then would the earth again be filled with violence, and again would it cry unto God for punishment, and again would He say, that "His Spirit should no longer strive with men," and that it "repented Him that He had made man upon the earth."

I have said that such a catastrophe as the deluge of Noah, is in no respect incomprehensible as a geological phenomenon, and were we bound to explain it by natural causes, these would not be hard to find. The terms of the narrative in Genesis well accord with a movement of the earth's crust, bringing the waters of the ocean over the land, and at the same time producing great atmospheric disturbances. Such movements seem to have occurred at the close of the post-glacial or Palæocosmic age, and were probably connected with the extinction of the Palæocosmic, or cave-men of Europe, and of the larger land animals, their contemporaries; and these movements closed the later continental period of Lyell, and left the European land permanently at a lower level than formerly. Movements of this kind have been supposed by geologists to be very slow and gradual; but there

The deluge
compre-
hensible as
a geo-
logical
pheno-
menon.

The narrative in Genesis does not imply a sudden catastrophe.

It purports to be the narrative of an eye-witness.

This view obviates the question of the universality of the catastrophe.

is no certain evidence of this, since such movements of the land as have occurred in historical times, have sometimes been rapid ; and there are many geological reasons tending to prove that this was the case with that which closed the post-glacial age. It is to be observed, also, that the narrative in Genesis does not appear to imply a very sudden catastrophe. There is nothing to prevent us from supposing that the submergence of the land was proceeding during all the period of Noah's preaching, which we are told was 120 years, and the actual time during which the deluge affected the district occupied by the narrator was more than a year. It is also to be observed, that the narrative in Genesis purports to be that of an eye-witness. He notes the going into the ark, the closing of its door, the first floating of the large ship ; then its drifting, then the disappearance of visible land, and the minimum depth of fifteen cubits, probably representing the draft of water of the ark. Then we have the abating of the waters, with an intermittent action, going and returning, the grounding of the ark, the gradual appearance of the surrounding hills, the disappearance of the water, and finally the drying of the ground. All this, if historical in any degree, must consist of the notes of an eye-witness ; and if understood in this sense, the narrative can raise no question as to the absolute universality of the catastrophe, since the whole

earth of the narrator was simply his visible horizon. This will also remove much of the discussion as to the animals taken into the ark, since these must have been limited to the fauna of the district of the narrator, and even within this the lists actually given in Genesis exclude the larger carnivorous animals. Thus, there would be nothing to prevent our supposing, on the one hand, that some species of animals became altogether extinct, and that the whole faunæ of vast regions not reached by the deluge remained intact. It is further curious that the narrative of the deluge preserved in the Assyrian tablets, like that of Genesis, purports to be the testimony of a witness, and indeed of the Assyrian equivalent of Noah himself. The "waters of Noah" are thus coming more and more within the cognizance of geology and archæology, and it is more than probable that other points of contact than those we have noticed may ere long develop themselves.

The narrative on the Assyrian tablets also purports to be the testimony of an eye-witness.

In connection with all this, a most important consideration is that above referred to, in the possible equivalency with the historical deluge of the great subsidence which closed the residence of palæocosmic men in Europe, as well as that of several of the large mammalia. Lenormant and others have shown that the wide and ancient acceptance of the tradition of the deluge among all the great branches of the human family necessi-

Lenormant's conclusion from the tradition of the deluge among all the great branches of the human family.

The effect of correlation of the deluge and the break in the geological history of man on views held as to the antiquity of man.

tates the belief that, independently of the Biblical history, this great event must be accepted as an historical fact which very deeply impressed itself upon the minds of all the early nations. Now, if the deluge is to be accepted as historical, and if a similar break interrupts the geological history of man, separating extinct races from those which still survive, why may we not correlate the two? The misuse of the deluge in the early history of geology, in employing it to account for changes that took place long before the advent of man, certainly should not cause us to neglect its legitimate uses, when these arise in the progress of investigation. It is evident that if this correlation be accepted as probable, it must modify many views now held as to the antiquity of man. In that case, the modern gravels spread over plateaus and in river valleys, far above the reach of the present floods, may be accounted for, not by the ordinary action of the existing streams, but by the abnormal action of currents of water diluvial in their character. Further, since the historical deluge cannot have been of very long duration, the physical changes separating the deposits containing the remains of palæocosmic men from those of later date would in like manner be accounted for, not by slow processes of subsidence, elevation, and erosion, but by causes of more abrupt and cataclysmic character.

PRIMITIVE SOCIAL INSTITUTIONS.

CERTAIN archæologists have recently been much occupied with attempts to trace the social condition of primitive man in the customs of the ruder and more barbaric tribes, and in turn to deduce these from a supposed bestial condition in which the family and the marriage tie did not exist. Now, it is well known, that in countries so widely separated as North America, India, Australia, and New Guinea, we find certain peculiar and often complex laws of affinity and of marriage, which are probably of very ancient origin. These are such as the following:—The recognition of woman as the principal factor in the family; descent in the female line, and systems of consanguinity based on this; exogamy or prohibition to marry within the same tribe or family; family totems or emblems devised to regulate these arrangements, and in connection with all this, a system of tribal communion in which the wives and mothers are a related communism, into which the husbands are introduced from without by the practice of exogamy.

Attempts to trace the history of primitive man.

Ancient laws of affinity and marriage.

That this complicated system sprang from a primitive promiscuous intercourse is a pure assumption, and contrary to scientific probability. The long period of helplessness and dependence of the human child renders it essential that the relation of husband and wife should have existed from the

The relation of husband and wife must have existed from the beginning.

The need of
guarding
the family
relation.

The design
of the law
of exogamy

first, or to place the matter on the lowest level, that man should be a permanently pairing animal, and the analogy of some of the animals nearest to man, though the nearest of these are very remote from him in this respect, strengthens this conclusion. Again, so soon as men formed tribes and communities, which necessity would oblige them to do almost from the first, it would become necessary to guard the family relation, and this was done by enforcing the rights of the wife and mother to her husband and her child, and to care and protection in child-bearing and nursing. Lastly, the law of exogamy could scarcely have been spontaneous, but must have been an expedient devised by sagacious leaders in order to prevent, on the one hand, too close inter-marriage, and, on the other, entire isolation on the part of the tribes into which men were necessarily divided, and at the same time to avert undue variation and degradation. In the record of the social arrangements of primitive man as given in the Bible, we have intimations of these institutions, and confirmations of their existence in subsequent references, even after the patriarchal and tribal arrangements had been fully established.

Man the
represent-
ative of God
in the lower
world.

Man was made in the "shadow and likeness of God," his representative in this lower world; but what of woman? "Male and female created He them;" and man in this double capacity was to

replenish the earth and subdue it, not its slave and worshipper, but its master—"treading it under his foot" as the words literally are. Man and woman were to do this, so that the woman as well as the man shares in the divine likeness; and it is in the family relation and in this alone, that such manifestation of God and the consequent subduing of the world can take place. Let us notice also that remarkable lesson taught to the man, when after submitting to him those animals nearest in rank, no help meet for him is found, and the woman is brought to him as his true help-meet, "bone of his bone and flesh of his flesh." This leads to the primitive law of marriage, which has until recently received less attention from historians and theologians than it merits; and not long ago, a late eminent archæologist was surprised when I pointed out to him that his discoveries of exogamy and descent in the female line had been anticipated in the law—"therefore shall a man leave his father and his mother, and shall cleave unto his wife." Here it is the husband who leaves his family to go with his wife, and she, as the centre of the family and mother of the children, is the true husband, the bond of the household. It is true, that after the fall and as a punitive visitation on the woman, it is decreed that her husband shall "rule over her;" but this, like other disabilities arising from the fall, may have been regarded in

Woman
shares the
divine
likeness.

The
primitive
law of
marriage.

The effect
of the fall.

Traces of
the prim-
itive prac-
tice in the
patriarchal
institutions.

The
patriarchal
system and
matriarchy.

early times as an evil to be removed if possible. Even under the patriarchal system, subsequently dominant, we find indications of the primitive practice in the belief of Sarah and Rebecea, that their sons, if they married in Canaan, must go into the tribe of their wives; and the prevalence of this law among many ancient nations, and especially among those of Turanian origin, has been well ascertained. Among American Indians, and Australian aborigines, it still lingers in customs which, however degraded, are nevertheless from the point of view of Genesis, reminiscences of unfallen men. I may pause here to note that the supposed antagonism between the patriarchal system, and what has been called "matriarchy" has no real existence, and this also is evident from the Scripture history. The social and family relations were founded on the rights of the woman; but the leader and counsellor of the tribe, the chief, especially in times of danger, is the oldest or most influential man. This distinction between civil and social laws has existed from the earliest times, and among very rude peoples, and it is singular that it should be overlooked as it has been in some recent discussions. Besides, as Dr. Tyler has remarked, when a maternal community has been broken up, and when one of its families has been for any reason separated from the others, it is natural that authority should fall into the

hands of the father. In other words, primitively the father takes the lead in a journey or expedition; in the village community the women rule; in the tribe or clan there is a patriarchal chief.

The best scientific as well as Biblical illustration of the primitive nature of marriage is afforded by the reference to it made by Jesus Christ himself in connection with the law of divorce. The Pharisees, most self-satisfied men, wise in their own wisdom and case-hardened in their own orthodoxy, as the most earnest bigots of our own day, and the Sadducees, as shallow, sceptical, and contemptuous as the most advanced of our modern Agnostics, agreed in sanctioning the loose notions of their time as to the sacredness of marriage. It is the Pharisees, however, who put the question, "May a man put away his wife for every cause?"¹ saying in effect, "Is woman the slave of man? May she be put away for any caprice, treated with any injustice, without offence to God?" Our Lord scornfully takes them back to the Book of Genesis and its simple child-like story. "Have ye not read," He asks, "that He who made them male and female" enacted for them the law of marriage, and that this law was "the man shall cleave unto his wife, and the twain shall become one flesh." That is God's order. Is there any place in it for putting away? Nay, if there were such, would it

The
reference of
Christ to
the law of
divorce.

¹ Matthew xix. 4.

not rather be the woman that could put away her husband, than the husband his wife?

The apostles' doctrine.

But, objected the Pharisees, Moses authorised divorce, and the Christian may also object and may plead the apostolic doctrine as to the subjection of woman,¹ but Christ has His answer to both. It is "because of the hardness of your hearts, but from the beginning it was not so." The original equality of man and woman was, like so much other good, broken down by the fall, which brought among other woes the subjection of woman, too often developed into tyranny and injustice to her.

Woman in a fallen world.

In a hard fallen world of labour, struggle, warfare, and danger, woman necessarily becomes the weaker vessel, and her original dignity of child-bearer, which gave her in Eden her high position, and which even after the fall is sought to be retained in her prophetic position as the potential mother of a Saviour, becomes in savage and rude states of society an additional cause of weakness and disability. Hence one of the great missions of Christianity is to restore woman to that place which she had in the beginning, to the Edenic position of being the equal help-meet of man. The Christian system, adapting this to the condition of an imperfect but improving world, holds before us the

The restoration of woman,

¹ Eph. v. 22; 1 Peter iii. 1, and other passages in the New Testament, where however the fall of man is referred to as the reason of this subjection.

Christian daughter, sister, wife and mother, as the most beautiful of moral pictures, the pillars of God's family. But this ideal will not be realised till He whose first title is that of "Seed of the woman" shall have bruised the serpent's head, and shall have restored the paradise of God.

The realisation of the ideal.

Before leaving this part of the subject it is well to contrast the grand and ennobling doctrine of the Bible, extending with perfect consistency all the way from the first notice of the relations of the sexes in Genesis to the personal teaching of Jesus, not only with the corruptions of His day, but with those base and degrading speculations of our time which can find in their godless philosophy no better foundation for the family and the rights of woman than the contests of beasts for the possession of their females. Perhaps none of the paths of Agnostic speculation is more repulsive than this to all the higher instincts of humanity, and certainly none is more instructive with reference to the abyss into which we are invited to fling ourselves. Let it be observed also that if we depart at all from the old Biblical idea of man created in the shadow and likeness of God, and thus endowed with a spiritual as well as an animal nature, there is no logical stopping-place, short of a moral gulf lower than that which any savage tribe has yet reached. In this respect our inquiries into the state of barbarous people

The doctrine of the Bible and current speculation on the subject.

striving to sustain themselves above mere anarchy and bestial relations by clinging to their old traditional laws and social customs, and in their darkness feeling after God if haply they may find Him, show us that their spiritual condition, low though it is, may be more hopeful than that to which the philosophical Agnostic has already reduced himself.

THE ORIGIN OF RELIGION.

The Duke
of Argyll's
view.

THE Duke of Argyll, in his work on the Unity of Nature, has well remarked that questions as to the origin of religion have some resemblance to the question, What is the origin of hunger and thirst? Given an organism wanting nourishment, and hunger and thirst seem to follow as matters of course. So in the case of religion: given a spiritual nature craving communion with its God, believing in its own indestructibility, having ideas of right and wrong, of duty and responsibility, some form of religion becomes a necessary condition of existence. The peculiarity of much modern writing as to the origin of religion is that the writers leave out of sight the spiritual nature of the man and the existence of a God revealing Himself to His rational offspring, and then proceed to ask how can a man destitute of any higher nature than that of the animal, and without any

Given a
spiritual
nature
religion
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existence.

Much
modern
discussion
assumes that
man is
destitute of
a higher
nature.

God, or incapable of knowing anything of Him, come to be a religious being? It is as if one were to imagine an animal destitute of any power of digestion, and of any need of food, and then to ask, How can it come to experience hunger and thirst? Conducted in this way, the inquiry as to the origin of religion must necessarily be nugatory.

On the other hand, if we are content to accept the nature of man as we find it in experience, and as it is represented to us in the Scriptures, we have a solution at once of the phenomenon that man is and always has been influenced by religion, just as he has been affected with hunger and thirst.

The attempts that have been made to classify religions, have also much in them that is misleading. If, for example, we attempt to distinguish between natural and revealed religion, we shall find that no religion is wholly natural or wholly revealed. In all there lie at the bottom those instincts of natural conscience and belief in immortality which seem to be inborn in man. In all there is some room left for the reason as the judge of truth and right. On the other hand, if we believe the Hebrew Scriptures to embody a revelation from God, we must also believe that portions of the same revelation exist in all religions, however corrupt. The religion of Adam and of Noah, as stated in the Old Testament, was not that of the Hebrews merely, but of right, that of all

Misleading
classification
of religions.

The religion
of Adam
and Noah,
etc.

mankind. Up to the time, in short, of the special legislation of Moses, the religion of the Hebrews was not theirs alone, but the common property of mankind; and we must expect to find traces at least of such truths as the unity of God, the creation, the immortality of man, the fall, the promise of a Saviour, the deluge and its moral lessons, in all religions. Practically we do find this to be the case, and nothing can be more interesting than to trace in the varied idolatrous and corrupt religions the golden thread of Divine truth which penetrates them, however hidden and obscured by foreign accretions. Viewed in this way, the whole mythology of the world becomes intelligible, and is illuminated by the Bible light. Without this guidance, it ceases to afford any definite results even to scientific investigation.

A thread of divine truth penetrates the various idolatrous and corrupt religions.

Max Müller's classification.

Max Müller, in his *Science of Religion*, rejecting the division into natural and revealed, proposes to arrange religions according to the great divisions of the human race, as Turanian, Aryan and Semitic. This classification is, however, equally useless without the light cast on the subject by the Bible. If we call, for example, the Jewish religion Semitic, nothing can be more certain than that it was a quite exceptional Semitic religion during the greater part of its existence, differing from the religions of cognate races in Western Asia, as much as from the religions of other Gentile peoples. On

The Jewish an exceptional Semitic religion.

the other hand, if Turanians and Aryans as well as Semites were sons of Noah, they must at first have possessed the same religion, and must merely have developed this in different directions, which we can easily see was the fact, when we study the resemblances and differences of the religions of antiquity. If we ask what caused the religion of the Hebrews to differ, its own history informs us that this sprang first from the pronounced dissent of Abraham from the religion of other Semites, and his falling back on the simplicity of primitive Monotheism; secondly, and as a consequence of the former, from the purity and definiteness given by the legislation of Moses. That these men actually lived and influenced the religion of their own and later times we cannot doubt, because such doubt would throw all subsequent history into confusion. If they were acting under the influence of the Spirit of God,—as we believe them to have been,—then their religion is a product of inspiration, and therefore a revelation. If not then they stand merely on the level of successful reformers, though here again may arise the question whether any successful reformer or elevator of humanity is destitute of some special divine impulse. In any case it is clear that the theory of religion, if we may so express it, embodied in the Bible is consistent with itself, and with the history and present condition of religious

The cause of the difference of the Hebrew religion from other Semite religions.

The Bible theory of religion consistent with itself and with the history and present condition of religion.

beliefs, and that without taking this Biblical theory into consideration, it will be hopeless to attempt to explain the origin and history of religion, or to classify religions with any certainty.

NATURAL THEOLOGY.

J. S. Mill's
admission.

THERE are certain schools of modern science and philosophy which affect contempt for the doctrine of final causes and for the teaching of the Bible with reference to the manifestation of God in His works. On the other hand, we find Mill, in one of his last essays, after rejecting every other argument for the existence of a God, admitting that the argument from design in the universe is irresistible, and that nature does testify of its Maker. There can be no question that in this Mill is right, if for no other reason than that old and well-known one that mere blind chance cannot be conceived of as capable of producing an orderly system of things. Farther, there can be no question that the one argument for a God which is convincing to Mill is also the one, and the only one, which the Holy Scriptures condescend to refer to. They habitually take the existence of God for granted, as something not needing to be proven to reasonable minds, but they reason from nature, with reference to His attributes and modes of procedure, as, for instance, in that

remarkable passage of the Apostle Paul where he affirms that to the heathen the “power and divinity” of God are apparent from the things which He has made. But perhaps there is no part of the Bible in which the teaching of nature with reference to divine things is more fully presented than in the Book of Job, and not a few even of religious men fail to see the precise significance of the address of the Almighty to Job, in the concluding chapters of that book.

The teaching of nature in the book of Job.

Job is tortured and brought near to death by severe bodily disease. His friends have exhausted all their divinity and philosophy upon him, in the vain effort to convince him that he deserves this infliction for his special and aggravated sins. At length the Almighty intervenes and gives the final decision. But instead of discussing the ethical and theological difficulties of the case, He enters into a sublime and poetical description of nature. He speaks of the heaven above, of the atmosphere, its vapours and its storms, and of the habits and powers of animals. In short, Job is treated to a lecture on natural history. Yet this instantaneously effects what the arguments of the friends have altogether failed to induce, and Job humbles himself before God in contrition and repentance. His words are very remarkable (Job xlii. 1-12) :

Job and his friends.

God's interference

“I know that Thou canst do all things,
From Thee no purpose is withheld;

Job's confession.

(Thou hast said) 'Who is this that obscures counsel without knowledge?' ¹

(And I confess that) I have uttered what I understood not,
Things too hard for me which I know not,
But hear me now and I will speak.

(Thou hast said) 'I will demand of thee
And inform thou Me.' ²

I have heard of Thee with the hearing of the ear,
And now mine eye seeth Thee;
Therefore do I abhor myself,
And repent in dust and ashes."

The effect
of God's in-
terference.

What does this import? Simply that, through the presentation to him of God's works, Job had attained a new view of God and of himself. He had not considered or fairly weighed the world around him in its grandeur, its complexity, its unaccountable relations, and contrasted it with his own little sphere of thought and work. Had he done so, he would, like Paul in later times, have said, "Hath not the potter power over the clay?" God, if really the architect of nature, must have thoughts and plans altogether beyond our comprehension. He must be absolute sovereign of all. It is our part to submit with patience to His dealing with us, to lean upon Him by faith, and thus to carry this almighty power with us. When brought to this state of mind, Job can be vindicated against his friends who have taken upon them to explain God's plans and have misrepresented them, as many good men like them are constantly doing; against Satan, the evil angel, who with all his

¹ Chap. xxxviii. 2.

² Chap. xxxviii. 3; xl. 7.

intelligence and acuteness cannot comprehend Job's piety, but believes it to be mere self-interest, and who now sees himself foiled and Job brought into still greater prosperity; while by the result and the explanation of it handed down to our time, there is a permanent gain in favour of the solution of the great moral difficulties of humanity.

I would put this case of Job before modern Christians in three aspects. (1) Do we attach enough of importance to the Gospel in nature, as vindicating God's sovereignty and fatherhood, and preaching submission, humility, and faith? Might we not here take a lesson from the Bible itself? (2) May there not be many in our own time who, like Job, have "heard of God with the hearing of the ear," but have not seen Him with the eye in His works? and, on the other hand, are there not many who have seen the works without seeing the Maker, who can even "magnify God's works which men behold," without knowing the Author of them? Would it not be well sometimes to bring together in friendly discussion those who thus look on only one side of the shield? (3) Should we not beware of the error of Job's friends in misrepresenting God's plans, and thereby misleading those whom we try to guide. These wise and well-meaning men had nature all around them, and had observed it with some care and minuteness, yet they disregarded its teachings, and

Three
aspects of
Job's case.

The teaching given in the book of Job needed even by many cultured minds in our time.

dwelt on old laws and philosophic dogmas, till God Himself had to bring out the whirlwind and the thunder storm, the ostrich, the horse, and the hippopotamus to teach a better theology. The Book of Job belongs to a very ancient time, when men possessed little of divine revelation, perhaps none at all in a definite and dogmatic form, yet there are in our time many even of cultured minds as ignorant of God's ways as were Job's friends. To them the same elementary teaching may afford the training which they need.

The object of this Tract.

The scope of this Tract has necessarily been somewhat discursive, since its object has been to glance at a variety of things new and old, relating to the Works and the Word of God. And thus to encourage the study of the Bible as a storehouse of Divine wisdom for practical guidance, as a light shining in a dark world, and enabling us to see our relations to God and our fellow-men; above all, as the revelation of Jesus Christ, the great Enlightener and Healer, given of God that "whosoever believeth on Him may not perish, but have everlasting life!"

CHRIST AND CREATION:

A TWO-SIDED QUEST.

BY

REV. W. SUNDERLAND LEWIS, M.A.,

AUTHOR OF

“The Great Problem; or, Christianity as it is,” “The Life of Lives,” etc., etc.



THE RELIGIOUS TRACT SOCIETY:

56, PATERNOSTER ROW; 65, ST. PAUL'S CHURCHYARD;
AND 164, PICCADILLY.

Argument of the Tract.



REVELATION and observation—methods of obtaining information which are often distinct, but to be sometimes combined. This eminently the case in regard to the relation between Christ and Creation, the subject of the present inquiry.

Beginning with Creation, these two authorities are shown to concur, first, as to the universality of the reign of law amongst visible things ; next, as to the general nature of the gradations marking the great ladder of being ; then, as to the place of man, and so of Christ as man, at the head of that ladder ; and, finally, as to the place of Christ as the head of mankind. The same authorities further agree in regarding the superiority of man to the animals as partly of a mental, but more of a moral, description ; and also in regarding the primacy of the historical Christ as resting on a similar, but far profounder, foundation. He is so much the greatest, because so transcendently the best, of mankind.

Revelation speaks also of the glorified Christ. Its language on this subject tells us—amongst other things—of certain changes in the risen body of Christ as the precursors and patterns of similar future changes in many other bodies beside ; though only, be it noted, where certain correlative non-bodily changes have taken place first. This is a prediction, in effect, of the future appearance on earth of a new pattern of life. Such a prediction not only already verified in part by the experience of many ; but also, at least, illustrated in measure by the researches of Science ; and that, both in its general character, and its more important details, as specified here at some length.

The result, so far, is the establishment of a numerous and weighty succession of correspondences between Scripture and Science, and the consequent demonstration of the main points on which these correspondences turn. In other words, Christ is the Crown of the past, and the Key of the future. So far, our two oracles are at one.

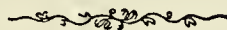
This conclusion leads to further inquiry. If Christ be so much, is He not very much more ? The suggestions of observation and the teaching of Revelation combine to show that He is. He is the Creator of all.

Hence, therefore, at last, the peculiar complexity, intimacy, and profundity, of the relation of Christ to Creation. He is at once the Fellow-creature and the Creator of all that is made ; the Keystone, as it were, of the whole arch of existence. Hence, also, the miserable inadequacy of all Non-Christian views of the cosmos. The best of them teaches men more error than truth.

A brief corroborative reflection is added. What Science says respecting “degradation” in general is compared with what Scripture says on the degradation, condemnation, and redemption of man. The harmony of this with our previous conclusions leads to the conclusion of all. The secret of Creation lies in the Person of Christ ! The secret of Redemption lies in His Cross ! “In HIM are hid ALL the treasures of Wisdom and Knowledge.”

CHRIST AND CREATION:

A TWO-SIDED QUEST.



I.

INTRODUCTORY.



REVELATION and observation are methods of ascertaining truth which are concerned chiefly with different fields of inquiry. The one tells us about the unseen; the other searches among the seen. For all this, however, it is not always practicable to keep their operations apart. The explorations of the latter amongst the things that are seen sometimes bring us so close to the shores of the unseen as at least to suggest a good deal. In the same way, the instructions of the former about the unseen sometimes tell us not a little respecting the things that are seen.

Revelation and observation different methods of ascertaining truth.

It seems to follow, therefore, that there are lines of inquiry in which we are more than warranted in seeking to avail ourselves of both these sources of light. Where the topic under discussion is one

Lines of inquiry in which both may be used.

on which they both offer to enlighten us, why should either be slighted? We are hardly likely, in that case, even with the assistance of both of them, to have more light than enough.

What
is the
relation
between
Christ and
Creation?

This inquiry
a case in
point.

It is on this principle accordingly that we desire to act in our present inquiry. Is there any relation between Christ and Creation? Between the Jesus of Scripture and the Cosmos of Science? And if so, of what kind is it? and how far does it reach? It is evident, we think, that these inquiries are of the two-sided sort we have named; and are manifestly such as take us within the domains both of Scripture and Science—both of knowledge and faith. With regard to most of these inquiries, also, it seems equally evident that the utterances of both these authorities respecting them are deserving of attention and thought.

Some inter-
pretations of
Scripture
and con-
clusions of
Science are
generally
accepted.

Notwithstanding much that is still uncertain, *e.g.*, in our interpretations of Scripture, there are some explanations of it which are almost unanimously regarded as not admitting of doubt. So, also, notwithstanding the large proportion at present of what is merely conjectural amongst the inferences of science, there are some of its deductions which are unanimously regarded as almost beyond the reach of dispute. The most important and apparently relevant of these generally-accepted conclusions on both sides, are what we now seek to combine. Accepting them all—for the moment,

These now
to be
combined.

at any rate—as being correct in the main, we would endeavour to see to what extent they appear to throw light on the subject of inquiry. The special interest of such an endeavour is evident from the first. Its full importance, if we mistake not, will come out at the end.

The interest and importance of so doing.

II.

CHRIST THE CROWN OF THE PAST.

WE may fitly begin our inquiry with that portion of our subject which lies the nearest to ourselves. Unquestionably, as human beings, we are part and parcel of that visible universe which is the special field of the researches of science. We would ask first of all, therefore, what those researches tell us about its constitution and nature ; and especially what they describe as the leading feature of all that we see. That word “cosmos” already referred to, shall help us to answer. By that well-known term science gives emphatic utterance to one of her most prominent views. The visible universe is a “cosmos,” according to her, because of the extraordinary perfection of “order” and “beauty” which the observation of man has learned to discern in it throughout. So Pythagoras is believed to have taught, ages ago, by coining that term. So every step in true knowledge since his time is believed to illustrate and confirm. Be-

Human beings part of the visible universe. What Science tells us of the universe.

The universe a “cosmos.”

The teaching of Pythagoras confirmed by Science.

Science teaches that the universe is conspicuous for its exhibition of law.

fore all things science teaches us that the universe is conspicuous for its exhibition of law. Everything exists—everything changes—according to rule.

Revelation expresses the same thought.

Does the teaching of Revelation say anything, and if so, to what effect on this subject? The method proposed by us requires us to consider this next. A very brief reference appears sufficient to settle the point. The first page of the Bible shows that the language of Revelation expresses the same thought; expresses it identically, only—as some think—in a more logical way. It speaks of a Ruler, that is to say, as well as a rule. It recognizes a Lawgiver as well as a law. And it invites our first and chief attention, therefore, rather to Him than to it. “In the beginning God created the heaven and the earth.” None the less, however, but rather all the more, does the exceedingly concise account of the visible universe which follows that opening sentence of our Bibles, recognize the perpetual presence of law. The idea of “order” is woven into it from beginning to end. If you destroy its order you destroy itself, whether in whole or in part. What special order, what studied order, there is in its times! What equal order, what conspicuous order, in the array of its facts! How careful its description of all the life it mentions as being “after its kind.” What explicit mention also, in other parts—as in describing

The account of the visible universe at the beginning of Genesis recognizes the presence of law.

the functions of the sun and moon, for example—of the imposition of rule! Is not the absolutely orderly constitution of all things, in a word, the special conclusion to which it points us itself? More than once the chapter pauses to speak of that described by it as “good.” At the end of all it speaks of all described by it as being more still. “God saw everything that He had made; and behold, it was very good.” The meaning of this—at any rate, in part—is easy to see. That is “good” in moral matters, according to Scripture, which is in compliance with rule. Righteousness is the observance, sin the transgression of law. In other than moral matters, therefore, such as these which are here, a thing will be “good” in this same kind of language when it answers its end; in other words, when it is in accordance with rule. By parity of reasoning, consequently, it will be “very good” when it answers its purpose to the full; when its accordance with rule is without a flaw. Except in depth, therefore, wherein does this statement of Scripture differ from that fundamental deduction of science to which we adverted just now? What is the *discovery* of the one but the *announcement* of the other—so far as it goes?

The orderly constitution of all things the conclusion specially pointed to.

God's declaration concerning everything that He had made.

It was “very good” because it answered its purpose to the full.

The discovery of science is the announcement of revelation.

After the fact of this universal order comes the thought of its manner. We will examine this first, as in the previous instance, from the side of human research. In that visible universe of which we

The lowest condition of matter known to human research.

The world of inorganic existence.

The elementary forces supplemented by higher ones.

The vegetable kingdom.

A third and higher group—the animal kingdom.

A higher still—the world of rational existence.

are speaking, human research knows of nothing lower than that condition of matter in which it is believed that its so-called ultimate atoms are acted on by elementary forces alone. To this category belongs the whole world of inorganic existence. Immediately above it comes another condition, in which these elementary forces have been supplemented by others of a higher description. To this category may be assigned all those vastly varied lower forms of organization and life which constitute the vegetable kingdom, as it is called. In the category next above this—a category in which both the previously-named groups of forces have been supplemented in turn by a third group of a still higher description—that higher world of distinctly sentient existence which is comprised in the so-called animal kingdom, is to be found. Lastly, by the addition of other energies yet to the whole previously-existing aggregation of forces, we come to a higher world still, the world, viz., of distinctly rational or intellectual existence. Ordinary observation cannot be said to know anything which is higher than this.

Notwithstanding the fact that a greater or less degree of uncertainty may be thought to attach, by some persons, to some of its gradations, the above may be accepted as a general view of the successive steps in the great ladder of existence so far as known to our senses. It may be doubted, in-

deed, whether it is possible at present to offer very much more ; and whether any inquirer is yet competent to give a description of the gradations in question, which shall be otherwise than uncertain in some of its limits, or more than approximate in any?

But this does not affect, in any vital manner, the question before us. All that is asserted here is, that there is a principle pervading them of the kind we have named. The second step of this ascent is not arrived at, that is to say, by thrusting the lowest away, but by building upon it. The third step is built, in like manner, on both the second and first. And the highest of all, therefore, is built in like manner again on all the others below. Nothing is subtracted, in short, but much is added all the way up.

One principle pervades all the steps of the ladder of existence.

It is important to notice what follows from this as to the nature of man. He stands, admittedly, at the very summit of this ladder of being. It follows, therefore, this being its character, that his nature is as thoroughly elementary, on the one hand, as it is thus pre-eminent on the other. He is as certainly animal, that is to say, as though he were not human as well. In some respects, again, he is as much the creature of instinct, as though he were not, at the same time, under the guidance of reason as well. And he is as certainly composed and built up of such elementary substances as carbon and nitrogen and

The two-fold aspect of the nature of man as at the summit of this ladder.

phosphorus, and so on, as though he were not also possessed of those highly distinguishing mental powers which no man at present can produce by their means. Of the same materials, in a word, as all that he sees, he is yet above it throughout—a highly-elaborated pillar of clay on a pedestal of the same.

Faith's
description
of man.

His pre-
eminence.

The first
order below
him—the
cattle, etc.

Then the
grass, etc.

Then the
"severed
lands" and
"gathered
waters."

Man not
divided
from any.

"Grass"
and "flesh."

Faith's description of the nature of man, and of the world he belongs to, though not identical with this description, is not at variance with it. In many important respects, we may rather say that it is tantamount to it throughout. On the one hand, *e.g.*, it describes man as standing at the summit of a practically identical ladder of being. First below him, as in the previous description, it shows us "the cattle, and creeping things, and fish of the sea, and fowl of the air." Next below them, as in the previous case too, it shows us the "grass" and the "herbs" and the "trees of the field." And below these again, as in the previous case still, those severed "lands" and gathered "waters" upon, or in, or out of the elements composing which all this manifold and multitudinous life is described as being produced. On the other hand, though placed thus at the summit of all, man is not described here, any more than before, as being divided from any. On the contrary, it is said expressly that "he also is flesh." And it is also said, just as expressly—and that, apparently,

with something more than a reference to the mere perishability of his nature—that “all flesh is grass.”

And of man himself, therefore, as of everything under him, that he is of “the dust of the earth.”

Man of
“the dust
of the
ground.”

This conclusion marks a definite step in the progress of our inquiry. The wildest unbelief acknowledges fully the true manhood of Christ. And faith, of course, while affirming still more, affirms as much as this too. According, therefore, to both these ways of regarding the question, the relation of Christ to creation—at any rate in the first instance—is the relation of man to the same. In other words, the historical Christ was at once superior, and yet akin to all the things that we see.

The true
manhood of
Christ ac-
knowledged
by unbelief

The
historical
Christ at
once
superior
and akin
to all that
we see.

It is with human beings, however, as we see it to be with the clouds in the atmosphere of this earth. Though all are necessarily above that from which, nevertheless, they have all been drawn up; they are not all above it, by any means, at the very same height. We see the direction, therefore, in which we must inquire next concerning the true position of Christ. What was that position in reference to those of the rest of mankind?

His position
in relation
to the
rest of
mankind.

The question does not really admit of more answers than one. In this respect also Christ was admittedly at the summit of all. As a matter of fact, even unbelief virtually acknowledges this. At

Christ ad-
mittedly
at the
summit
of all.

The name
of Christ
and the
place of
Christian
civilisation.

the present moment it is certain that the name of Christ is the most influential name upon earth. Christian civilisation, at the present moment, is the highest we know. What is it, in effect, but the successor of others which held similar rank in their day? At one time the civilisation of Rome, such as it was, had conquered the world by its arms. Every one knows how the civilisation of Greece, by its culture, subdued this in its turn. The civilisation of Christianity, which is the civilisation of Christ, has long overcome both. How significant the fact that we have the Gospel message in the language of Greece; and that the most illustrious of tongues found its highest function in telling the world about Christ!

In the eye
of faith
Christ the
highest of
men.

To the same effect, on this point also, does our other authority speak. It is simply notorious, in fact, that to the eye of faith, Christ is the highest of men. In the language of faith, to be a "Christ" or an "Anointed One" at all, is to be one set apart for great use. To be "the Christ," therefore,—to be *the* Anointed One—is to be the most distinguished among such. It is to stand amongst them as they stand amongst the rest of mankind. Consequently, it is to be adorned with a crown which it were flat treason even to offer elsewhere.

This brings us, of course, to a second definite step in discussing the relation of the historical

Christ to the things that are seen. He stands at the head of those beings who stand at the head of them all.

On this point, however, a further question requires to be asked. When we speak of the manhood of the historical Christ as being confessedly the highest of all, in what precise sense is this true? Wherein had that manhood its chief advantage over all else that was human? In almost every crown there is some individual jewel which shines brightest of all. Was there such a jewel, and, if so, what was its nature, in this particular crown?

The inquiry necessitates a further view of the complex nature of man. In all that we have hitherto said of him here, we have tacitly assumed that his intellectual faculties have most to do with securing him the eminent place which he holds. And it cannot be denied that they are of real moment in regard to this point. Without undertaking to dispute the existence of anything similar to these faculties in some apparently exceptional races or members of the purely animal world, it cannot be denied that he is very widely differentiated in this respect even from these. The well-known fact that any marked approach to those mental processes which we reckon on in him, astonishes us in them, seems to prove this of itself. It may be doubted, however, for all this, whether we have the key of the case in this fact; and whether the

Wherein
the
manhood
of Christ
excels all
else that is
human.

The
intellectual
faculties
in relation
to the place
of man in
creation.

The
difference
between
man and
the highest
members
of the
purely
animal
world.

The crowning advantage of man lies in his moral rather than his intellectual endowments.

Signs of shame and fear in animals.

The sense of right and wrong in the abstract peculiar to man.

Explains the sense of shame men feel in secret.

Prompts the open confession.

crowning advantage of man over the brutes does not lie rather in his moral, than in his intellectual endowments. Here again it is no doubt true of some among these—more especially so, perhaps, of those species amongst them which are brought much into contact with men—that they do sometimes seem to evince something like a sense of duty or right. At any rate, where they have distinctly disobeyed the commands of those to whom they look up as their masters or owners, they do sometimes show undoubted signs, if not of shame, yet of fear. But this cannot be put on a par for a moment with that sense of right and wrong in the abstract, and that inward approbation of the one and disapprobation of the other, of which human nature seems to be always capable, even when found at its worst. Why else is it that men sometimes find themselves blushing in solitude at their secret misdeeds? Why else is it, also, that they sometimes even find a relief in making these known? If that inward disquiet which prompts them to this were merely a kind of reflection—as some affirm that it is—of the disapprobation and ill-usage which such offenders fear from others, supposing those others to know of their secrets, surely, instead of urging them to make those things known, this would be just the feeling to prevent them from doing anything of the kind. Certainly it would never lead a man guilty of mur-

der, for example, to give himself up spontaneously to certain ignominy and death—as has happened frequently before now. Clearly the principle that does this must be something apart from other men's thoughts. Clearly, also, the principle that does this must be something essential to the normal nature of man. Individuals who appear to be almost wholly deficient in this respect, may be discoverable here and there, it is true. But this is no more wonderful in its way than the occasional occurrence amongst us of individuals who are wholly unable to distinguish discords from concords, or bright objects from dark. Deafness and blindness are not to be regarded, on that account, as the normal condition of men.

The moral sense essential to the nature of man.

Cases of men destitute of moral sense abnormal.

It is easy to see also, on the other hand, how intrinsically superior to everything else within man is this essential part of his nature. It is superior, first, in its strength. We test the strength of a force by its conquests. What can it overcome at its best? In the cases just referred to, we see what this principle of conscience can overcome at its best, viz., the fear of ignominy and death. It is hard to name anything, indeed, which this same principle has not overcome in its time. It is impossible, therefore, to name anything within man which is stronger than this in its way! This principle is superior also, in the next place, in regard to its rank. Even in that depth of remorse

The superiority of the moral sense to everything else in man.

The supreme power of this principle.

Something
in remorse
not to be
treated with
scorn.

How much
its absence
means.

How much
its per-
fection
implies.

A further
necessary
distinction.

The
imperfection
of a man's
knowledge
of right
often due
to his weak
sensitiveness
to evil.

just now adverted to, we all feel that there is something working which ought not to be treated with scorn. The wretch who feels it, however otherwise degraded, is higher than the wretch who does not. Do we not all feel also, on the other side of the case, that the less a man is capable of this inward compunction for evil, the nearer he is to the brute? As also that the more he is restrained by the positive side of the same principle from the commission of evil, the more eminent is his worth? After all, what we most profoundly *admire* in a man lies in this direction alone. It is not his talents, not his endowments, not his powers, not his attainments, but his character that we *respect*! The more CONSCIENTIOUS, the more of a MAN!

One other thing also, in regard to this point, must not be passed by. This "conscientiousness" is not quite so simple a thing as it looks. It is a "function" rather "of two variables," as the mathematicians express it. Not only, that is to say, are there differences of sensitiveness among men with regard to the attainment of right; there are also among them equal differences of opinion as to the nature of right. Practically, also, these differences are found to tell very much on each other. A man's knowledge of right, *e.g.*, is sometimes very imperfect because, with his weak sensitiveness on the subject of evil, he has

never wished it, in reality, to be very much more. He has loved darkness rather than light. So, on the other hand, the comparative imperfection of a man's knowledge of right, not infrequently has the effect of causing his desire for it to be weak. He loses the power of *sight*, as it were, for the want of *light*, as with certain creatures in caves. Probably of the far larger majority of mankind we should not be very wrong in saying that they have suffered somewhat—if not suffered greatly—in both these respects. Their sensitiveness as to right has been impaired because their standard of right has been low. On the other hand, their standard of right has been lowered because their sensitiveness about it has been weak. And thus in both ways, therefore, there has been a sore diminution in their moral superiority to the brutes. Sometimes, in fact, that superiority will be found to have shrivelled into little more than a certain capacity for being ashamed—a relic which serves principally to give evidence of what ought to have been!

Imperfect knowledge often causes his desire for right to be weak.

Lamentable diminution thus caused sometimes in man's moral superiority to the brutes.

These considerations may enable us now to give a sufficient answer to the question previously asked. The great superiority of the historical Christ to the rest of mankind lies in the lines we have traced. Where all other men fail in some measure, where most other men fail egregiously, He succeeded entirely. In other words, with neither of the disadvantages, He had both the advantages—

The superiority of the historical Christ to the rest of mankind moral.

The key to Christ's superiority lies in the absolute perfection of His teaching and example.

The attempt to blacken His name felt to be hopeless.

Christ the best of His race.

How Revelation at once transcends and confirms this conclusion.

and that to perfection—of which we have spoken. Never was anything purer than His teaching, unless it were His example. This was *the* jewel which made His diadem the solitary thing that it was. He was so specially the highest, because, in every way, He was so far the best of mankind. Even those who are not prepared to admit all that is claimed for the Jesus of history by His Church, admit this to be true. This is evident from the tone taken by them in attempting to account otherwise for His fame. It is felt now to be a kind of forlorn hope to try and blacken His name. No hypothesis can now expect to be listened to, to any serious extent, which starts with the assumption of evil in Him. Such is the verdict of nearly twenty centuries of hostile observation and thought. What the experience of the world has never claimed for any other it admits about Him. He was the best of His race.

Revelation, of course, in proclaiming Christ to be the Man "without sin" goes beyond this a great deal; and in so doing, of course, confirms it also in the strongest possible way. According to both witnesses, therefore, we are brought to the same conclusion respecting the ethical position of Christ. Incontestably He held the moral primacy among the children of man.

III.

CHRIST THE KEY OF THE FUTURE.

HITHERTO, in considering the relation of Christ to Creation, we have purposely taken only a partial view of the case. We have only contemplated Him as He existed on earth before His death on the cross. Of the nature of Christ as it existed in those subsequent days of which the Scriptures also inform us, we have refrained from speaking as yet. But it is evident, of course, that we must do so no longer if we would take a complete view of our subject. Revelation also speaks to us—and that not less copiously—of a glorified Christ. And it is saying the least, therefore, to say of this latter part of His story that it must not be left out.

Christ after
“the days
of His
flesh.”

The
glorified
Christ.

In discussing this, it will be best, on many accounts, to begin with the Scriptural side. What do those Scriptures which assure us of the rising again of Christ from the dead, and of His subsequent manifestation “by many infallible proofs” to those who had best known Him before, tell us besides on this point? What do they tell us, especially—for this has most to do at this juncture with our present inquiry—about that bodily nature in which He appeared at that time?

The
testimony
of Scripture.

The answer is plain enough in some respects, if

The post-
resurrection
body of
Christ.

Its
appearance.

The effect
on His
followers.

Its
character.

No longer
subject to
death.

That new
body not
another.

somewhat mysterious in others. After the rising again of Jesus of Nazareth, the Scriptures ascribe a body to Him which was in several ways "higher" than that in which He had previously died. It was a body "higher," in the first place, in fashion or look. That singular mixture of hesitation and adoration which is described as marking the behaviour of those intimate friends of Christ, to whom He is said to have showed Himself after His passion (see Matt. xxviii. 17.; John xxi. 12), suffices to prove this of itself. Evidently now, they see something other—evidently now, they see something higher—than aught which they had previously seen. That risen body is also described in Scripture as having become something "higher" in character than what it previously was. The well-known fact that the Christ who had previously died is now described as having become the Christ who never can die again (Rom. vi. 9), suffices to prove this of itself. All the difference, in fact, between immortal and mortal is implied in such words. At the same time these changes in the appearance and character of the body of Christ are never represented to us as being of such a nature as to sever its connection with that which existed before. After all, that new body is not so new as to have lost identity with the old. "Handle Me, and see that it is I Myself."

This, however, is by no means all that is declared to us on this point. Revelation, on the contrary, always describes this mysterious change in the body of Christ as at once the precursor and the pattern of many others beside. History is, in this matter, to follow its custom of repeating itself. In other words, either along the same path as that which was travelled by Christ, or else along a shorter path still, changes similar to those which passed on the body of Christ at His resurrection, are to pass hereafter on many other bodies as well. This is taught us plainly, on the one hand, in general terms: "We shall not all sleep, but we shall all be changed." This is taught us, on the other, with no less plainness, as to the main details of the change. As in the previous case of Christ Himself, *e.g.*, there is to be a change in *look*, to begin. A change in look which shall have the effect of making the bodies affected by it similar in appearance to that of Christ Himself (see Phil. iii. 21; 1 John iii. 2). Also, as in the previous case again, there shall be a change, after the pattern of Christ, in character too—that which is now mortal or subject to death in the subjects of this change, becoming victor over it then (1 Cor. xv. 53, 54). And yet, finally, as in the previous case still, the change effected shall not be such as to involve loss of identity with that which existed before. This

The same change to take place in other bodies.

This taught in general terms.

Details of the change.

Appearance.

Character.

No destruction of identity.

The change
eternal
deliverance
from
destruction.

“mortal” is to *put on* “immortality; this “corruptible” is to *put on* “incorruption;” they are not to be obliterated thereby. So far, in fact, will the change in question be from effecting destruction, that it will deliver from it for ever.

Every man
not to be
changed.

An inward
change
must be
first
experienced.

The
teaching of
Scripture on
the subject.

One other feature requires to be noted in what Scripture says to us on this point. We are not taught to look for these great external changes in every man’s case. Only, in fact, where certain similar internal changes have taken place first, are we to expect these outer ones to ensue. The language of Revelation is notably consistent, as well as peculiarly deep on this point. We have already noticed that, even in man at his worst, there exists a certain slumbering and unenlightened capacity for distinguishing moral evil and good; a capacity which is supposed by some to be sealed (see Prov. xx. 27, Eph. v. 14), in his pneuma or spirit. But, except for this, the Bible describes man as he is as a wholly “psychical” being. He has a merely “psychical” or “natural” mind, in a merely “natural” body. In both respects, however, he is described to us as being susceptible of amendment. On the one hand, he is so, in regard to his “mind.” When that “mind” or “spirit” is touched effectually by the power of the Spirit of God, Scripture describes it as becoming “quickened” or “created anew,” with such consequent powers of appreciation and

The change
a quickening
or “new
creation.”

will and performance in regard to spiritual matters as it never previously knew. Not unreasonably, therefore, when the spring of a man's nature has been "spiritualised" thus (if so we may speak), is such a one spoken of in Scripture as having become a "spiritual" man. Not unreasonably, also, in such a case, is that other and outward branch of amendment spoken of as sure to ensue. Nor is it unreasonable lastly, when that is so, that the new outward nature thus brought into being should be described to us by a similar name. Such, at any rate, is the case. "It is sown a [psychical or] natural body; it is raised a *spiritual* body." In that fact, so the apostle teaches us, we have the essence of all. In that fact we can see, also, that we are in the presence of the consummation of all. Even if it be not in our power—whilst still this side of so momentous a change—to discern all that is meant by the singular and striking term here employed to describe it, we can at least perceive the beauty and admire the harmony of the idea. Such a favoured tenant in so glorious a dwelling—such a "spiritual" mind in such a correspondingly "spiritual" body—such a likeness to Christ in inward faculties and in outward expression as well—make up together a completeness of symmetry which lacks nothing even in thought.

The quickened becomes "a spiritual man."

The changed body becomes "a spiritual body."

The ideal perfection of this two-fold likeness to Christ.

Thus much, in a general way, of the Scriptural

The same
subject
from the
side of
human
research.

view. We have to ask next, whether anything can be learned about this branch of our subject from the opposite side. Do any of the accredited results of human research bear upon it at all? And, if so, in what manner? And to how great an extent?

Many have
already
experienced
the inward
change.

The first of these questions is not to be answered at once in a negative way. So far, on the contrary as concerns one particular field of human experience, the very reverse appears to be true.

There are multitudes of men, at any rate—themselves the successors of similar men in the past—who deliberately declare themselves to be already the subjects of one part of this change. They know themselves now to be other than they were at one time—so they distinctly assure us—in the things of the spirit. They find themselves moved by desires, they find themselves in the enjoyment of faculties, they find themselves conscious of powers of which they knew nothing before.

To despise
their
testimony is
to despise a
great fact.

Such testimony is a fact which no one who deals with facts can afford to despise. In all other subjects of inquiry a greater degree of evidential weight is attached to the testimony of experts—be they many or few—than to all the random guesses of all the inexperience of all the rest of the world. We are at a loss to know why we should not do the same in this subject as well.

Even apart from such testimony, however, there

are many positive facts which at least seem deserving of attention in regard to this point.

Other facts deserving of attention.

What the various Scriptural statements just quoted really amount to, when all taken together, is a deliberate prediction of the future appearance amongst us of a new pattern of life.

The Scriptures referred to, a virtual prediction of a new pattern of life.

When all that of which they assure us shall be fully accomplished, there will be a new description of man—a new variety of being—on the face of this earth. Is this at all at variance, is it not rather in exact accordance (so far as it goes), with some of the most honoured deductions of scientific inquiry regarding the past of this earth? According to these deductions, there has been a long succession of similar manifestations—manifestations similar in their novelty, if not in anything else—on the face of our earth. We are told that its crust, in fact, for furlongs downwards, is a vast repertory of the remains of such beings; and that the whole number of living forms which have first appeared, and then disappeared, in the days of the past, is considerably greater than the whole number in existence at present. Viewed in this general way, the Scriptural announcement which we are considering only adds another term to this almost immeasurable series of being; and simply declares that that shall be in the future which has been in the past. The inferences of science almost prophesy—the same thing.

The deductions of science on this point in accordance with Scripture.

The Scriptural announcement only adds another term to an almost immeasurable series of being.

Parallelisms
illustrating
Scriptural
statements.

In the
order of
existence
the lower
precedes the
higher.

In the
predicted
genesis of
the new
man the
natural
precedes
the
spiritual.

The
principle
of addition
as referred
to before.

The same
principle
found in
Scripture
teaching
concerning
the predicted
higher life
on earth.

Also, if we turn from this general view of these Scriptural statements to the consideration of some of their more important details, we shall find parallelisms, we believe, which, if not strict analogies, are illustrations in point. One such occurs, for example, in connection with the question of order. So far as men have hitherto traced the succession of existence in the days that are past, they believe themselves to have established a remarkable general rule in regard to this point. In the same line of existence, the lower form, though not the less perfect, has always preceded the higher. That being so, is it not at least worthy of notice, that in the predicted genesis of the "new man" also, this is to be emphatically the rule? "Howbeit, that is not *first* which is spiritual, but that which is natural; and *afterwards* that which is spiritual."

We find another illustration, in the next place, on the question of mode. When endeavouring at first to take a general view of the great ladder of being so far as ordinarily known to our senses, we saw that the one principle pervading all its changes was the simple principle of addition. Nothing was subtracted, much was added, all the way up. That being so, it is surely a fact to be marked that an apparent illustration of the same principle is to be found in the teaching of Scripture concerning the nature of that higher life which she bids us

expect on this earth. In what way, according to her, is that highest visible life of the future to differ from the highest existing at present? As that does in turn from the kind of life immediately below it, and as every lower kind also does in turn from that immediately below it, viz., in the way of addition alone. This is true, on the one hand, of the inner faculties of this new species of man. "These be they," it is written of some (see Jude 19, R.V., margin), "who separate themselves, natural, not having the Spirit." In other words, it is this *addition* of "having the Spirit," which differentiates the "spiritual" from the "natural" so far as the inner man is concerned. Much the same also is true, on the other hand, of the outward framework as well. When the apostle in 2 Cor. v. 1-4, speaks of this body of the future under the figure of a dwelling, and declares for himself how greatly he longs to enter on the possession thereof, he is careful to show us that he looks for it only in the way we have named. "Not for that we would be unclothed, but clothed upon;"—so it is that he writes (2 Cor. v. 4).

The highest life of the future differs from the highest life of the present in the way of addition alone.

The principle of addition in relation to the future body.

We may extend our comparison also to the nature of the addition to which this differentiation is due. We have seen that the principal inward advantages of man as he is over the best of the animals below him, lie in the direction of his vastly superior power of reasoning, and of appreci-

The nature of the addition to which the differentiation is due.

The inward advantages which make the "new man" superior to the "old."

The spiritual and the natural mind.

The interval between them.

ating the "right." If these things exist at all in the members of the merely animal world, it is in a rudimentary form at the best. It is the comparative perfection of these faculties in man which lifts him up so far above them. Just so is it, also, according to the teaching of Scripture, of those inward advantages which make the "new man" superior to the "old." These also are said to depend on a difference of a precisely similar kind. As we have seen, it is by the enlightening of the dark, by the awakening of the dormant, by the quickening of that which was lifeless before, that the spiritual mind supplants the natural, and becomes able to "understand the things of the Spirit." *There* is the difference which gives the "new man" of Scripture his great present advantage over the old. In both cases, in short—the case of the natural man compared with the animals, and the case of the spiritual man compared with the natural—the interval between the higher and lower is described as of transcendent magnitude and significance, and yet is not an abyss.

Whether we are taught as much as this with regard to man's outward framework as well, is not so easy to see ; but we are clearly taught that which is not out of keeping with such an idea. The body of man, as men are now, is said to possess one conspicuous advantage over all merely animal

bodies now in existence, in its greatly superior power of adaptation to external influences of all sorts. The human body can not only sustain life, when exposed to changes which are simply destructive to others, but even enjoy it too in a measure. If we suppose this adaptability increased to such a degree—and there are reasons for believing this not to be so very difficult a thing to accomplish—as to make the body of man superior to all the external influences to which it will ever be exposed, it is clear that in that case his body would be possessed of a practical immortality such as that of which we are told. Nor would such a transformation be so wholly unexampled in magnitude as might appear at first sight. The original transition, *e.g.*, from inanimate to animate existence, does not appear, to our minds, to be very much less. Of the two things, indeed, there seems a distinctly greater change in causing life to begin than in causing it to advance. On this part of the subject, therefore, if our two authorities do not exactly appear to harmonize, they are not at variance, at the worst. A point this, in the circumstances surrounding them, not unworthy of note.

The advantage of the human body over other animal bodies.

What the human body might be made.

The transformation not wholly unexampled.

To cause life to begin greater than to cause it to advance.

We come next to the more debateable question of the origin of new types. No doubt on this point the really established conclusions of science

The origin of new types.

New types
seem
sometimes
to appear.

Their
ultimate
permanence
uncertain.

New
"varieties"
do appear.

They take
their origin
from one
centre.

The
"copper
beech" a
familiar
example.

have not much to say to us yet. In the field of nature, as it lies before us at present, we do sometimes discover, it is true, what look like examples of the new appearance of types. But we cannot at present speak positively as to the ultimate permanence of those forms. Some such, on the contrary, as a matter of fact, have already ceased to exist. The "gourd" which was found to appear in the one night, disappeared in the next. Still, it is a fact to be dealt with, that certain new "varieties" of formation—so called in order to distinguish them from those forms of more assured character and stability, to which the name of "species" is given—do now occasionally make their appearance (sometimes with, and sometimes without the interference of man) on the great arena of life. And it is also a fact which has to be dealt with, that a large majority of the "varieties" in question have been found by observation to take their origin, not from many centres, but one. The "copper beech" of our ornamental plantations is a familiar, and, therefore, a suitable instance in point. This peculiar description of beech a few years ago was wholly unknown in the world. It now exists as a distinct "variety" in all parts of the land. It is also a "variety," the exact dispersion and origin of which—to a certain extent—can be easily traced; the individual specimen, it is said, being still in existence, which first of all, as it were, gave the start

to the fashion in question. And, *be that as it may*, there is no manner of doubt that the records of horticulture and of domesticated animal life, abound with instances of a similar kind. Nothing is more common, in fact, than for what are known as “varieties” to originate in this manner. Whatever their destiny may be, this is how they began. The diversity which one specimen originated, other connected specimens afterwards followed. Thus the group started; thus it has grown.

Similar instances abound in the records of horticulture and animal life.

Is there anything similar in regard to that new race or “group” in the life-history of mankind, of which we are told in the Scripture? That there are many points of strong dissimilarity in regard to this case, is visible of course at a glance. But this does not in any way militate against the possibility of likeness in it in other respects. As a matter of fact, indeed, so far as that unicentral mode of appearance is concerned to which alone we are now referring, no degree of resemblance could very well be more express and complete. Consider, *e.g.*, how distinctly this case of new nature, in both departments, is described as originating with One. Also, how distinctly we are told of all those persons who now possess it in part, and are hereafter to possess it in full, that all this is only in consequence of their connection with, and also after the pattern of One! There are few things, in fact, of which revelation tells us with

The new “group” in the history of mankind.

The unicentral mode of appearance.

Scriptural
descriptions
of the
inward
trans-
formation
and of the
future
outward
change.

The new
"group"
made up
of those
who have
undergone
the double
change.

The many
spring from
the one.

greater plainness of speech. To be practical "imitators of Christ," on the one hand, to have the "mind which was in Christ Jesus," to be "conformed" to Him in spirit and feeling, these are its descriptions of that inward transformation which changes the "old man" to the "new." On the other hand, to "bear the image of the heavenly" One in outward frame and appearance as well, and to have these "bodies of humiliation conformed unto the likeness of His body of glory," when we "see Him" at last "as He is," is the description it gives of the other and future part of the change. Add to which, as it is only of those thus doubly changed, on the one hand, so is it expressly of *all* of such, on the other hand, that this new race is made up. So far, therefore, as concerns that one point on which alone we are dwelling, what we are taught to believe of this race is what we have seen illustrated also amongst "the trees of the field," viz., the many springing from one! No sensible person will despise this comparison because of the vast interval it embraces. The whole experience of science rather teaches us to do the reverse. The simpler the nature of a principle, and the wider its grasp, the stronger—so far—the probability of its truth.

"The very law which moulds a tear,
And bids it trickle from its source,
That law preserves the earth a sphere,
And guides the planets in their course.

Another thing, also, in this illustration, deserves to be weighed. The whole existing Adamic race is traced in the Bible to an origin of this kind. "Adam begat a son in his own likeness, after his image." Succeeding "Adams" (so to call them) by doing the same have made the race what it is. Such, in brief, in regard to this matter, is the Scriptural story. Its special importance in our present inquiry lies in the fact of its being employed by the Bible itself in illustration of the genesis of the new race of mankind. This is done indirectly—amongst other things—when Christ, as the Head of this higher and later race, is called the "last Adam" or "second Man." This is done directly, when it is said of those who are destined to belong to that race, that, as they have "borne the image of the earthy," *i.e.*, of Adam, so they are to bear "the image of the heavenly," *i.e.*, of Christ. A certain amount of resemblance, in fact, seems to be predicated in the Bible respecting the very processes employed in bringing these issues about. The great general scientific principle of "like begets like,"—the same principle which is recognized in the language of Scripture when it describes all living existence as being "after its kind"—is described as lying at the foundation of both. In other words, as it is by "generation" that all natural men inherit the image of the "first," so it is by "regeneration" both of spirit

The origin of the Adamic race.

Christ the "last Adam" or the "second Man."

The new "group" who bore "the image of the earthy" are to bear the "image of the heavenly."

The scientific principle of "like begetting like" the foundation of both.

The "image of the earthy" comes by generation, the "image of the heavenly" by re-generation

The
parallelism
not to be
pressed too
far.

Yet it is
not without
weight.

The time
of the
appearance
of types
difficult to
determine

The general
prevalence
of this or
that order
of life in
given ages
may be
learnt, but
not the
date of its
rise.

and body that all spiritual men are to bear finally that of the "second." This is not a parallelism—it may be—to be pressed very far. But it is still less to be slighted. For on the one hand, to a certain extent, it compares the genesis of the "new man" with that of the old. On the other hand, it compares the genesis of the natural man with that of "the trees of the field." In a certain way, therefore, it at least seems to bridge over that vast interval between the first of these and the last, of which we have spoken; and gives express Scriptural sanction, and therefore still greater significance to the illustration just traced.

Connected with it we may trace another which is also not without weight. Science has always found it difficult to determine exactly the geological time of the first appearance of types, even in a relative way. On few points, indeed, are the characters employed by that great book of stone which lies at our feet more difficult to decipher. Something they sometimes tell us, no doubt, as to the general prevalence of this or that order of life in this or that age of the past. But it is very rarely that they tell us as much respecting the exact date of its rise. The footprints, as it were, of the main body of processionists are often discernible enough to our gaze. But it is not so often that we find reliable indications of those of

the vanguard as well. Over and over again, on the contrary, has the experience of more recent researches disproved on this point what previous inquirers had regarded as proved. In all such cases, therefore, it would seem to be obvious that the processions in question did not begin with very much show. That can hardly have been very marked or conspicuous at the time of its occurrence which has only left such scant traces behind. We believe, indeed, that this is what is generally held with regard to this point. What is true of individual, is believed to be true also of collective life, as a rule. It seldom, at starting, makes much noise in the world.

The entrance of the orders of life without show.

Life at starting makes little noise.

Are we not taught the same also, in the same general way, on the other side of our quest? In a certain sense that new and glorious "order of life," that illustrious "kingdom of God," the full development of which, according to Scripture, is reserved for the future, has already begun. It is a long time now since the original Exemplar or Leader of this "order of life" appeared on the earth. Ever since then, however, according to Scripture, a continual though far from universal process of conforming men inwardly to that same pattern has been going on in this world. Yet how true it is further—and that in both cases—that it has not been "with observation" that this "kingdom of God" has so far appeared. This is plain, on the one hand, of

The new "order of life" already begun.

Its appearance without observation.

The first appearance of the last Adam known to few and inadequately appreciated.

that beginning of all, the first appearance of the last Adam Himself! Who were there at the time among the children of the first Adam that were aware of that fact? And even among those very few who did know of the fact, who possessed anything like an adequate idea of its significance and importance?

The resurrection of Christ a mere report to all but a few.

Much the same was true also of that great second stage in this world-affecting process which took place when this glorious second Adam was raised again from the dead; and so was born a second time, as it were (Rev. i. 5). Except to a very few, at that time, that most momentous of earthly occurrences was nothing more than a thing of report. Nor are things very different, as a matter of observation, with all those individual cases of change of heart and of gradual conformity to the spiritual likeness of Christ, which we believe to be so many scattered yet united steps towards the consummation in view. How very little, if anything, is to be seen outwardly and at the time, of such inward transitions as these. "The wind bloweth where it listeth, and thou hearest the sound thereof, but canst not tell whence it cometh, and whither it goeth: so is every one that is born of the Spirit." And how little is known, therefore, of the actual existence among us of that whole family or class of men of the future, to which these changed persons belong. So hidden a factor

The great change in individual men unobtrusive.

Little known of the men of the future now among us.

are they, so comparatively unknown an ingredient, so unsuspected a power, as things are, in the world ! Nor does it seem intended indeed, according to Scripture, that things should be otherwise with them in this respect, until that future time which is therefore spoken of as being their "manifestation" (Rom. viii. 19) ; and in regard to which, also, it is so emphatically said of them, that they are "then to shine forth" (Matt. xiii. 43). It would almost seem, in short, as though their present obscurity was intended to be in exact proportion to the future brightness of their lot. What impossibility of concealment then ! What equal difficulty of discernment now ! What a "trumpet" then ! What silence now !

Their
"manifestation"
reserved
for the
future.

The
contrast
between
their
present and
future lot.

One other point follows in connection with the first appearance of types. Such generally unobtrusive arrivals could hardly have been productive of any very great degree of visible disturbance in the general features of the particular life-scape in which they appeared. Not Alexander himself could fight many battles till he had left his cradle behind. We are not without positive evidence, indeed, of a condition of things which gives strong support to this view ; positive evidence, that is to say, of the simultaneous existence on the arena of life of both the new dynasty and the old, something the same (shall we say ?) as when the rising sun is seen facing the departing full moon. In some cases, in

Only little
disturbance
caused by
these un-
obtrusive
arrivals.

The eo-
existence
of the
new and
the old.

Pre-cereal
plants
living by
the side of
cereals.

New and
old forms
of marine
life.

Obliteration
of type
slow.

Scripture
teaching on
this point
respecting
the new
race.

The older
description
of life
little
disturbed
as yet.

Both to
exist till
the end of
the age.

fact, we see that the older form has not even yet been so far disturbed as to give way to the new. It is certain, *e.g.*, that many descriptions of plants which were flourishing in the world before the introduction of the cereals are living still by their side. And it is equally certain, we believe, that forms of marine life are now in existence which cannot be distinguished from certain other forms which are known to have inhabited some of the earliest oceans of which any record is left. Obliteration of type, in a word, in the days of the past has been usually slow.

Does not Scripture also teach us the same respecting the new race of mankind? In a certain sense, as we have seen, this race has already begun. Many, at any rate, of those "copies" of the original "pattern" which are to make up that race at the last, are in a more or less forward state of preparation at this moment. As yet, however, there has been no serious disturbance, in consequence, in the general current of the older description of life. Neither are we to expect it, in fact, according to Scripture, during the present order of things. On the contrary, of "both" descriptions of life, as we see them now in the "field" of this "world," it is written expressly that they are to "grow together" until the "end" of this "age." Nor is it quite clear from the Bible, even of that "end" of so much, that it is

also to involve the total cessation of the present race of mankind.

This particular application of the principle before us must be taken, of course, for what it is worth. But the general fact that in the relative experience of the church and the world Scripture teaches us to see an old race existing by the side of a new one which is ultimately much to surpass it, seems to be beyond the reach of dispute. Here also we find the obliteration of type not by any means swift.

Scripture teaching as to the co-existence of the two races indisputable.

We come, lastly, to the very momentous question of cause. Doubtful indeed as may be the value of certain modern hypotheses which aspire to account for the amazing variety and multiplicity of life on this earth by merely natural laws, one of the principles embodied in them seems to be certain enough. The action of "environment" on that which it environs is undoubted and great. Put into other phraseology, this statement may not be quite so much of a discovery as some of its prophets seem to imagine; but it is none the less sure. That "man," at any rate, is to a large extent the creature of "circumstances," is what we have long known to be true. That the creatures which are below him in all other respects are not above him in this, seems to follow of course. Nor can it be doubted in fact, touching all the things that we see (at any rate) that changes in environment and

The question of cause.

The action of environment.

The influence of circumstances on man.

outward surroundings—changes in “circumstance,” that is to say—have generally been the precursors of changes in that which was surrounded thereby. But this, it is evident, is only the beginning, and not the end of the matter. This does not tell us to what remoter causes these first-named external changes were due; still less to what still remoter causes those were due in their turn; nor would it mend matters very much, it is clear, if it did. No possible number of successive answers of this sort can exhaust the possibilities of the case. No matter how numerous these *transmitted* energies may be, the last of them will point us to the absolute necessity of an *untransmitted* one to begin. This is the conclusion to which we are brought by our own researches and reason. This is how observation suggests to us—how it almost reveals to us—the operation of “will.”

The proximate causes to which the changes are due.

The necessity of an untransmitted cause to begin with.

Observation suggests the operation of “will.”

The testimony of Scripture.

The exertion of will caused the waters to bring forth, etc.

How actual Revelation speaks on the subject it can hardly be necessary to point out. It was a power wholly outside of man, according to it, which formed man at first out of the dust of the earth, and which afterwards breathed “into his nostrils” that “breath of life” which made him “a living soul.” It was a similar power from outside, also, according to it—a like exertion of will—a corresponding word of command—which caused the earth and the waters to “bring forth” the lower life of the beasts, and the

fishes, and the fowls of the air, on the one hand ; together with the still lower life, on the other hand, of the grass and the herbs and the trees of the field. Nor is the case different in regard to that higher life of which we have now been speaking so much. Where are we to look for the force which changes the carnal into the spiritual ; the rudimentary into the perfect ; the mortal into the immortal ; comparative death into superlative life ? Not to anything already acting, or even already existing within. Not to any aspiration that comes from below, but to a command that comes from above. This is the uniform teaching of Holy Scripture respecting the whole of this change. It is by the presentation and special application of truth to the mind of the natural man, *e.g.*, that the higher life of his inward nature is described as brought into being (John xvii. 17 ; James i. 18). In other words, those persons who become the subjects of this unobtrusive but mighty change are described to us sometimes as being “born of the Spirit” or “born from above” (John iii. 3-8) ; sometimes as “born again by the word” (1 Pet. i. 23) ; and sometimes, with marked reference to both the negative and positive sides of the subject, as “born *not* of blood, nor of the will of the flesh, nor of the will of man, but of God” (John i. 12). Similar to this also is the language employed in the corresponding case of

The higher life due to the same cause.

The higher life engendered by the presentation and application of truth to the mind.

The new
birth of
the body.

the new birth of the body. That also is spoken of, negatively, on the one hand, as a "house *not* made with hands;" and, positively, on the other, as a "building of God" (2 Cor. v. 1, 2), a "house from heaven," something formed from without. And to this same effect, finally, the apostle virtually writes when he says on the same subject (1 Cor. xv. 52), that "we shall not all sleep, but we shall all *be changed*:" that passive form pointing to an active principle which is outside of ourselves.

The final
change.

So many are the lines in which this "new pattern of life" is found walking in the steps of the old!

IV.

THE POSITION SO FAR.

The
agreement
so far of
observation
and
revelation.

ON all the topics as yet discussed by us on the twofold plan proposed at the beginning, we hope it will be found, on review, that our two oracles have been in agreement. *So far as they have gone*, they have helped in every case to illustrate one another.

Such a fact is one which appears, in every way, to be deserving of note.

Scripture
and Science
not hope-
lessly at
variance.

It is so, first, in itself. If Scripture and Science were so hopelessly at variance as some have asserted, it would have been quite impossible to find *any succession* of correspondences between them.

It is so, next, in regard to the *number* of the

agreements in question. Roughly speaking, those now adduced will hardly be less than some twenty in all. In a case such as this, which depends on examples, this is of very great weight. How many matters of moment have been fully settled on the strength of very much fewer?

The number of the agreements adduced.

The fact before us is also worthy of notice in regard to the question of *kind*. How exceedingly diversified is the character of the regions in which these cases of agreement occurred! We have found them behind and before; up and down; here and there, as it were! In the pages of history! In those of prophecy! Amongst the organized! Amongst the unorganized! In the "world" within us! In the world around us! In questions of matter! In questions of mind! In questions of morals! In higher realms still! All this makes their argumentative weight a hundredfold more than if we had discovered them all as it were within a few yards of each other.

The variety of the agreements adduced.

Once more, this succession of correspondences is worthy of note in regard to the question of *source*. Can any two sources of information less apparently likely to produce such correspondences, be easily named? It is not only, as we noticed at first, that Revelation and Observation respectively address themselves to wholly different and even widely-separated regions of thought, in the main. That is only half of the truth.

The unlikelihood of their sources.

Another and equally important half is to be found in the fact, that, even when they do happen to have the same subject in common, it hardly appears, in their hands, in consequence of the different standpoints from which they approach it, the different fashions in which they handle it, and the different objects they have in view to be the same thing. The marvel is, therefore, in the instance before us, that we should so often have found the respective utterances of Scripture and Science to be, as it were, in “conjunction”; and, when thus in conjunction, instead of eclipsing, to have so illuminated each other. It really is not easy, as a question of evidence, to give too much weight to this fact. That so many instances of agreement, on so many different points, should be found on the part of two witnesses so singularly independent that they only rarely have any experiences in common, speaks volumes for both.

The weight
of the
agreements.

And therefore, of course, for that which we may speak of as their common result. In such circumstances we cannot reasonably doubt but that their main witness is true. Christ is indeed, as they teach us, on the one hand, the Crown of the Past! Christ is indeed, as they teach us, on the other hand, the Key of the Future! Both our authorities, and all our researches—on these points—are at one.

Their main
witness
therefore
true.

Christ the
Crown of
the Past
and the
Key of the
Future.

V.

CHRIST THE AUTHOR OF ALL.

THIS conclusion, however, must not be regarded as the conclusion of all. Rather, from one point of view, it is only the groundwork of a still further inquiry. If Christ be all this, He may be very much more. If He stands in these relations, He may stand in still higher ones, to the things that are seen. Our two authorities having brought us, as it were, to the very verge of this question, we are bound to see whether they can help us to settle it too.

A further inquiry.

To see this, on the one side, let us revert again to the vital question of "cause." That the proximate cause of all change of type is in something outside; and that the ultimate cause, therefore, however remote, must be in that outward force we call "will," we have already agreed. What we would ask now is, whether it is not possible for us to see some distance beyond. The notion of "will" seems to carry with it the notion also of person. Every *act* of volition assumes an *actor*—if so we may speak. It is in this direction, accordingly, that we would now endeavour to look. Where are we to seek for the "actor" of that special "act of volition" to which our thoughts have been turned? By whose "will" is it that this "new man" is caused to exist?

"Will" the ultimate cause of change of type.

"Will" involves personality.

By whose "will" is the "new man" caused to exist?

The only conceivable earthly candidate for the position is Christ.

If the "actor" in question is to be sought in this world—and that "observation" of man to which we are now referring is confined to this world as a rule—there is but one reply, of course, to be given. The only conceivable earthly candidate for such a position is to be found in the person of Christ. On this negative side there does not exist even a cranny for doubt.

What the skill of man can do in this line.

Even on the positive side also there are not wanting phenomena which look like indications this way. What the skill of man can accomplish in this connection by the judicious use of certain energies which he finds in action both around and within him, we have already considered. To a certain extent he is thereby enabled to modify "life." To a certain extent, indeed—though only it appears in combination with great uncertainty both of result and duration—it is not impossible for him sometimes to cause new successions of life to come into being. This is one of the many ways in which he excels in action, as he excels in endowment, the rest of the animal world. That which they are unable even to think of, he is able to do.

What the power of Christ may be expected to do.

What is the natural inference, therefore, when we compare him, in this respect, with one so much *above* him as Christ? Evidently that this greater One should have the power of accomplishing very much more in this line. In a general way, indeed, we cannot reasonably doubt this being truly the

case. The matter concerned is hardly one in which there might be a lack of superiority on the part of Christ without hurt. Could there be supremacy at all, in fact, if there were no supremacy in so (literally) vital a matter?

Is it not clear also, if we think of it, that this is just the kind of superiority which befits the position of Christ? Let it be granted, as no doubt it must be, that the interval involved in this comparison is something enormous. To direct the development of a new variety of rose or pigeon, *e.g.*, is one thing. To bring into being such a world of "new men" as the Scripture speaks of, is prodigiously more. It may even be true—it most probably is—that so enormous a degree of difference in result points to corresponding difference of at least equal magnitude in manner of working as well. Yet even this, it must be evident, by no means destroys the resemblance spoken of, *so far as it goes*. However different the two operations may be in dimensions, their directions are alike. However diverse also their manner and purpose, their intrinsic nature is one. What both end in, is the appearance of that which was not in appearance before. It would seem, therefore, on the whole that we are directed with double force to our present inference on this matter. The "resemblance" spoken of exactly agrees with the fact that Christ Himself was a man. The "difference" detected equally

The kind of superiority implied befits the position of Christ.

An enormous difference.

A real resemblance

What the resemblance agrees with.

What the
difference
agrees with.

agrees with the fact that He was so much the highest of men! On the one hand, a merely subordinate change, brought about with very uncertain workmanship, and lasting (apparently) only a limited time; that sums up, in this direction, the whole working of *man*. On the other hand, an amazingly greater transformation, brought about with the certainty of a Master hand, and never destined to come to an end; that is the other work, on this line, into which we examine. Who more fitting than "the Son of Man" to be its author and cause?

What their
combination
implies.

This probability carries with it the possibility of wider work yet. Whatever the power which accomplished the greater, it cannot be unequal to doing the less. Nothing, in fact, that has ever yet been accomplished in this cosmos of ours, can be of a nature to be beyond the reach of that power! This is abundantly plain. If we have really found in Christ the *actual Originator* of the *highest*, it also follows, of course, that we have found in Him the *possible Author* of *all*!

Christ as the
actual
Originator
of the
highest,
the
possible
Author of
all.

And therefore—of course, also—we have found in Him all that this means! All it means, however vast! however transcendent! Even if it involves ascribing to Him, as no doubt it does, the very Highest of Names! All this is virtually admitted when we admit His competency to be the Author of all!

What Revelation says to us on this subject is so very explicit that we need not dwell on it much.

The testimony of Scripture.

It is by the "voice" of Christ Himself, *e.g.*, as addressed to men "now" (John v. 25), that their *spirits* are described in Scripture as being caused to "live" in His sight. And it is to be by means of that "voice" also, addressed to them hereafter (John v. 28), that the "resurrection of life," the change of the *body*, is to become theirs. To the same effect, also, we read of the one change, on the one hand, "Awake thou that sleepest, and arise from the dead, and Christ shall give thee light" (Eph. v. 14); and, on the other, that "we are His (*i.e.*, God's) workmanship, created anew in Christ Jesus unto good works" (Eph. ii. 10). To the same effect do we read, also (of the other change), in such a declaration as this:

Both resurrection and regeneration! ascribed to Christ.

"If the Spirit of Him that raised up Jesus from the dead dwell in you, He that raised up Christ from the dead shall also quicken your mortal bodies, by His Spirit that dwelleth in you" (Rom. viii. 11.) Or, in such another as this: "He (that is, Christ) shall change our vile body, that it may be fashioned like unto His glorious body, according to the working whereby He is able even to subdue all things to Himself" (Phil. iii. 21). Whatever is done in this way, in short, Revelation teaches us to regard as done in some way by Himself. Other names may be sometimes included. His is never

The one the consequence of the other

No "new man" either in body or spirit except by Christ's power.

left out. According to Scripture, in short, there is no "new man"—either in body or in spirit—except by His power.

All things created by Christ.

Equally plain are the declarations of Scripture respecting the origin of all the rest of creation. Sometimes we are told, *e.g.*, that God "created all things by Jesus Christ;" sometimes, that "by Him God made the [ages, or] worlds" (Heb. i. 2); sometimes, "that all things were made by Him," and that "without Him was not anything made that was made" (John i. 3); sometimes, that "all things were created by Him and for Him" (Col. i. 16); and sometimes, finally, that "by Him all things consist" (Col. i. 17), and that He it is, who, seated now at the right hand of the throne, "upholdeth all things by the word of His power" (Heb. i. 2).

All things consist by Christ.

Observation and revelation bring us thus to see Christ as the Creator of all.

The general issue, therefore, of this brief further inquiry is like that arrived at before. Observation and Revelation had already brought us so far that little was required in order to take us a long distance beyond. The whole of that little, these two authorities have now effectually done. The one by its gestures, and the other by its speech, have conducted us on till we see Christ presented to us as the Creator of all!

VI.

THE POSITION IN FULL.

WE may at last fully see, therefore, in the connection before us, the position of Christ.

The full position of Christ.

We see, in the first place, that His relation to creation is not a simple one, but highly complex.

To a certain extent, for example, it is one of identification with it. Being man, Christ is what man is, viz., akin to all that is made.

Christ akin to all that is made.

On the other hand, it is also one of vast superiority to it. Even in the fact of having Himself furnished the highest example of the present race of mankind, Christ is above all that we see. Much more is He so in having become, in His own person, the beginning and model of that higher race which is to appear by-and-by on the earth. And most of all is He so, of course, in being the actual Creator as well of that race as of all it excels.

Christ above all that is made.

It follows, therefore, of the relation in question that it is something altogether unique. No other Name exists in regard to which *all* these things can be said!

The consequent uniqueness of His relation to creation.

It also follows, of the relation in question, that it is of a peculiarly intimate kind. Christ is at once the Fellow-creature and also the Creator of all that is made. Only one thing closer than these combined relationships can be even conceived.

The peculiar closeness of its intimacy.

The absolute
universality
of its
influence.

It follows, yet again, of the relation in question, that it has the widest possible scope. It may be said, in fact, to be the keystone of the whole arch of existence. It is that which embraces, that which completes, that which unifies all. The seen and the unseen, the past and the future, the idea of development and that of creation, the discoveries of men and the revelation of God, are shown by it to be so many parts of one symmetrical whole. In a word, the earliest and the latest, the highest and the lowest, the furthest and the nearest, are all what they are because of the impress on them of their relation to Christ. As the Psalmist says, in another connection, "there is nothing hid from its heat."

The
consequent
inadequacy
of all
systems of
knowledge
that leave
it out.

And it follows, finally, therefore, that all systems of knowledge must be miserably inadequate which leave this point out. A circulating system without a heart, a respiratory system with nothing to breathe, the solar system deprived of its sun, are none of them so deficient as is the conception of the cosmos without Christ. Nothing but fragments of knowledge can be obtained by us when we try to study it so. Nothing, therefore, but what hides from us far more than it shows. Nothing, in short, but what conveys to us more error than truth!

VII.

THE CONCLUSION OF ALL.

A CORROBORATIVE and supplemental word may be added, in conclusion, from a different region of thought. Instead of symptoms of advance, we have seen that sometimes symptoms of retrogression are discoverable in the creation around us. Those animals in caves, referred to before, which possess something of the form, but none of the power of organs of vision, appear to be cases in point. Their sightless eyes seem the survivals, and so the indices of a former condition of things ; the marks, as it were, which point out to us the former height of the tide. Similar instances are to be found, in regard to the physical nature of man, in those deformed and stunted specimens of men which inhabit and infest the more crowded parts of some of our cities. And similar instances, in regard to their moral and mental endowments, in those races of men which are said to prefer falsehood to truth, even as a matter of taste. Compared with races which agree in treating deceit as both a folly and a dishonour, such races appear evidently to have gone down in the scale. A strong argument for this view of the case appears in the fact that under proper influences they can be more or less elevated therefrom ; which is exactly parallel with what we find to be true of certain domesticated races of animals

Symptoms
of retro-
gression in
creation.

Deformed
and stunted
specimens
of men.

Mentally
and morally
depraved
specimens.

The
possible
elevation
of such
people.

which have been allowed to run wild. We can do with such races what we can never do with those that have always been wild.

Our race
a fallen
one.

These considerations may at least help to prepare us for hearing what Revelation has to say to us on the point under discussion. For hearing, for example, that the whole of our race is a fallen one. Fallen physically, and so subject to death. Fallen mentally, having the "understanding darkened." Fallen morally, and therefore standing in need of an outward law or command. Also, in regard to a still higher aspect of the question, they will at least prepare us for being told that spiritually speaking our race has lost the very conception of what was enjoyed by it once.

Also a
condemned
one, and so
in double
need.

These lamentable evils involve necessarily other evils as great. In other words, besides being degraded, we are also condemned. Dark indeed, therefore, in both respects, are the natural prospects of men. The "good tidings" themselves begin their message by describing them so. As to our condition, they begin by telling us that we are "already condemned." As to our nature, they begin by telling us that it requires "creating" anew.

Deliverance
from con-
demnation.

What has been and is to be done for us in the way of elevation and renewal we have already considered in part. What has been done and is doing in the way of delivering us from condemnation has not been spoken of yet; and

is indeed far too vast a subject to be fully discussed in this place. But we may at least note here that Scripture always speaks of it as a work of such magnitude that, compared with it, even that of creation is small; and at the same time, also, as a work of such necessity that even that of renewal requires its accomplishment first. No extremer necessity, in short, is known to men, according to faith. Neither is there any greater enterprize than that of supplying it, according to faith. Here, in fact, is *the* "mystery," for the revealing of which, according to it, Revelation is given.

Its
magnitude
and
necessity.

The relation of Christ to this work of works is at once the same as that which was shown us elsewhere, yet widely different too. The same in regard to the unquestioned supremacy both of His position and power. As in creation, so in redemption, nothing is done without Him. He is *the* Saviour, *the* Mediator, *the* Redeemer of man. On the other hand, the relation of Christ to redemption is entirely different in regard to the manner in which He carries it out. What He does in the one case by the exercise of His will, He is described as only achieving in the other by the deep humiliation of His Person. In the one, He is at the summit of all; in the other, for a season at least, at its foot. There, in the place of the King; here, in that of the criminal. There, bestowing life; here, yielding it up. In the one case, in a word, the

The place of
Christ in
redemption.

In what
respects
similar to
His place in
regeneration.

In what
respects
different.

Sceptre is His from the first; in the other, it does not become His till it has smitten Him first.

The twofold
harmony of
this with
our previous
conclusions.

We look upon all this as being strikingly in harmony with all that we have previously seen. In Nature and Time Christ is all in all by such a majestic and stepless advance as that which the heathen of old days ascribed to their gods. In Redemption and Grace Christ is all in all, by such a weary succession of blood-stained steps as only He could have trod. How well this agrees, on the one hand, with the unity of the Person! How equally well, on the other hand, with the diversity of the work! Can any redemption be brought about without cost? And is not such a cost amply sufficient even for such a redemption?

Its
harmony
with the
unity of
His person,
and the
diversity
of His
work.

In their several ways, therefore, we see the final conclusions to which our combined authorities have now brought us.

The
consequent
Sum of all

The Secret of Creation is to be found in the Person of Christ. The Secret of Redemption is to be found in His Cross. There is not much wisdom—if there be any at all—outside of these truths! “In HIM are hid ALL the treasures of wisdom and knowledge.”

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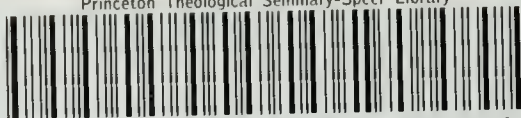
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